THIS SUPPLEMENT WILL REMAIN IN EFFECT ONLY UNTIL THE INFORMATION IS PUBLISHED IN AN OFFICIAL DEPARTMENT OF THE ARMY PUBLICATION.

SUPPLEMENT
15 APRIL 1950

SUPPLEMENT TO
TM 11-607
RADIO SET AN/VRC-2

The following information, published on Order No. 20591-Ph-49, supplements TM 11-607, 7 January 1946 and Changes No. 1, 5 November 1948. The serial numbers of the equipment covered in this supplement are:

Name	*Serial numbers*
Radio Set AN/VRC-2 2 sets	———
Radio Receiver R-237B/VR	1 thru 4465
Radio Transmitter T-193B/VRC-2	1 thru 4465
Control Head C-493B/VRC-2 2 ea	1 thru 4465
Microphone M-27/U 2 ea	———
Antenna AT-129B/VR 2 ea	———

Personnel using this equipment and having custody of this technical manual will enter suitable notations beside each affected paragraph and figure in the technical manual to indicate the presence of this supplementary information.

Add "Radio Receiver R-237/VR and Radio Receiver R-237A/VR" to the captions of the following figures:

Page 31. Fig. 24.
Page 32. Figs. 25 and 26.
Page 33. Fig. 27.
Page 34. Fig. 28.
Page 35. Fig. 29.
Page 36. Fig. 30.
Page 37. Fig. 31.
Page 38. Fig. 33.
Page 39. Fig. 34.
Page 40. Fig. 35.

Page 1. Par. 1. Change "(figure 1)" in the first sentence to read: (figs. 1, 1.1, and 1.2).

Page 1. Par. 1b. Add the following "Note" after paragraph 1b:

Note. Radio Transmitter T-193B/VRC-2 receives its power from a dynamotor.

Page 1. Par. 1. Change the last sentence in the note to read:

Thus Radio Receiver R-237(*)/VR represents Radio Receivers R-237/VR, R-237A/VR and R-237B/VR.

Page 1. Fig. 1. Insert figure 1.2 after figure 1.1.

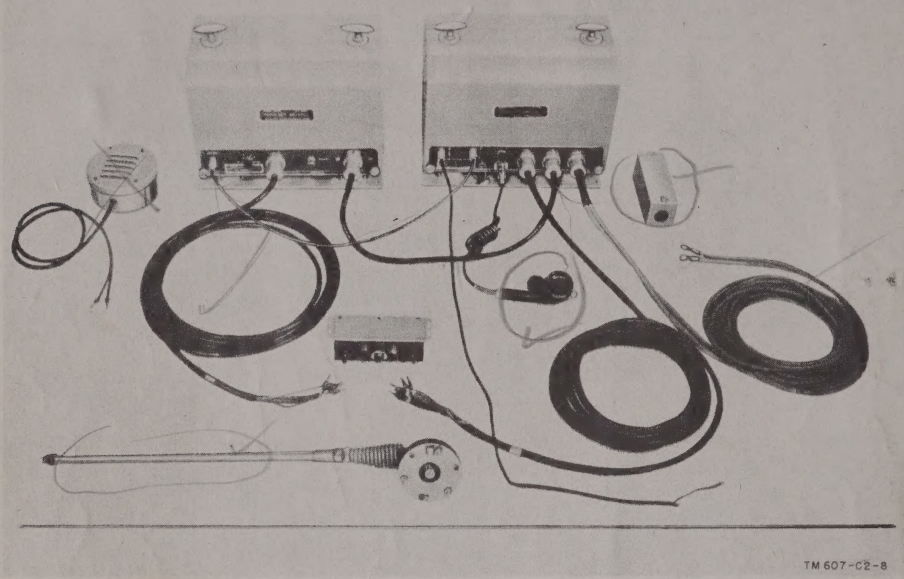


Figure 1.2. Radio Set AN/VRC-2 (sets bearing Order No. 20591-Ph-49).

Page 1. Par. 2. Add the following "Note" after paragraph 2:

Note. Radio Transmitter T-193B/VRC-2 is powered by a dynamotor.

Page 2. Fig. 2. Change nomenclature of components in block diagram and caption of figure 2 as indicated below:

1. Receiver PA-8033 to Radio Receiver R-237(*)/VR.
2. Transmitter PA-8026 to Radio Transmitter T-193(*)/VRC-2.
3. Control Head P-8022 to Control Head C-493(*)/VRC-2.
4. Delete nomenclature P-327E.
5. Delete nomenclature P-255.
6. Change caption to read: Radio Set AN/VRC-2, over-all system block diagram.

Page 2. Par. 3b. Add the following "Note" after paragraph 3b:

Note. The power output of Radio Transmitter T-193B/VRC-2 is 30 watts and it has a dynamotor power supply.

Page 3. Par. 5. Add the following "Note" to paragraph 5.

Note. For Radio Sets AN/VRC-2 procured on Order No. 20591-Ph-49, there is no generator filter, spare set of transmitter tubes, and spare set of receiver tubes. A fuse guard which is 2½ inches high, 2⅜ inches deep, and 6⅜ inches long is supplied. It weighs 2 pounds. The antenna box is 4 inches wide and 4 inches deep.

Page 4. Par. 6. Add the following after paragraph 6.

6.1. Differences in Models

a. The external appearances of the various models are practically identical. The later model has changes in the values of some of the circuit components to improve performance.

b. The late model, procured on Order No. 20591-Ph-49, has a dynamotor power supply for the transmittter instead of a vibrator power supply. There is no generator filter in the new model but there is a fuse guard.

c. In addition, the new model, procured on Order No. 20591-Ph-49, has special mounting plates for shock insulation. These mounting plates may also be used for the previous models by using special hardware.

Page 4. Fig. 4. Insert figure 4.2 after figure 4.1.

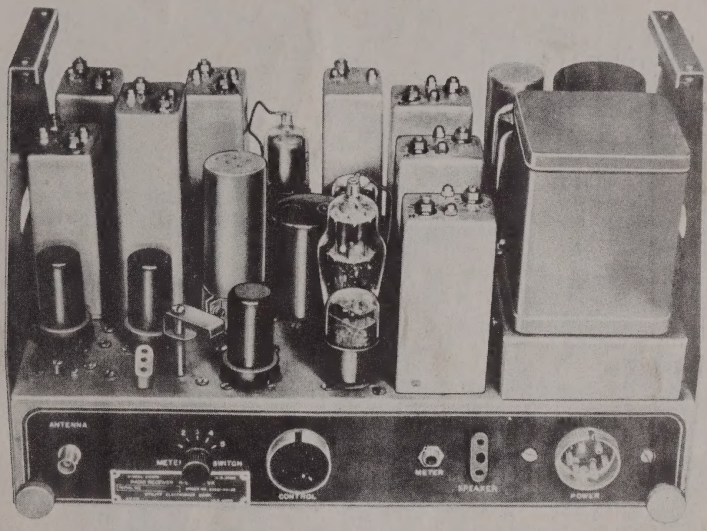


Figure 4.2. Radio Receiver R-237B/VR, with case removed.

Page 4. Par. 7. Line 5. Change "(See figs. 4 and 4.1)" to read:
(See figs. 4, 4.1, and 4.2).

Page 4. Par. 7. Line 9. In the sentence beginning, "Bottom views of the receiver," change the reference to read:
(figures 5, 5.1, 5.2, 6, 6.1, and 6.2).

Page 5. Fig. 5. Insert figure 5.2 after figure 5.1.

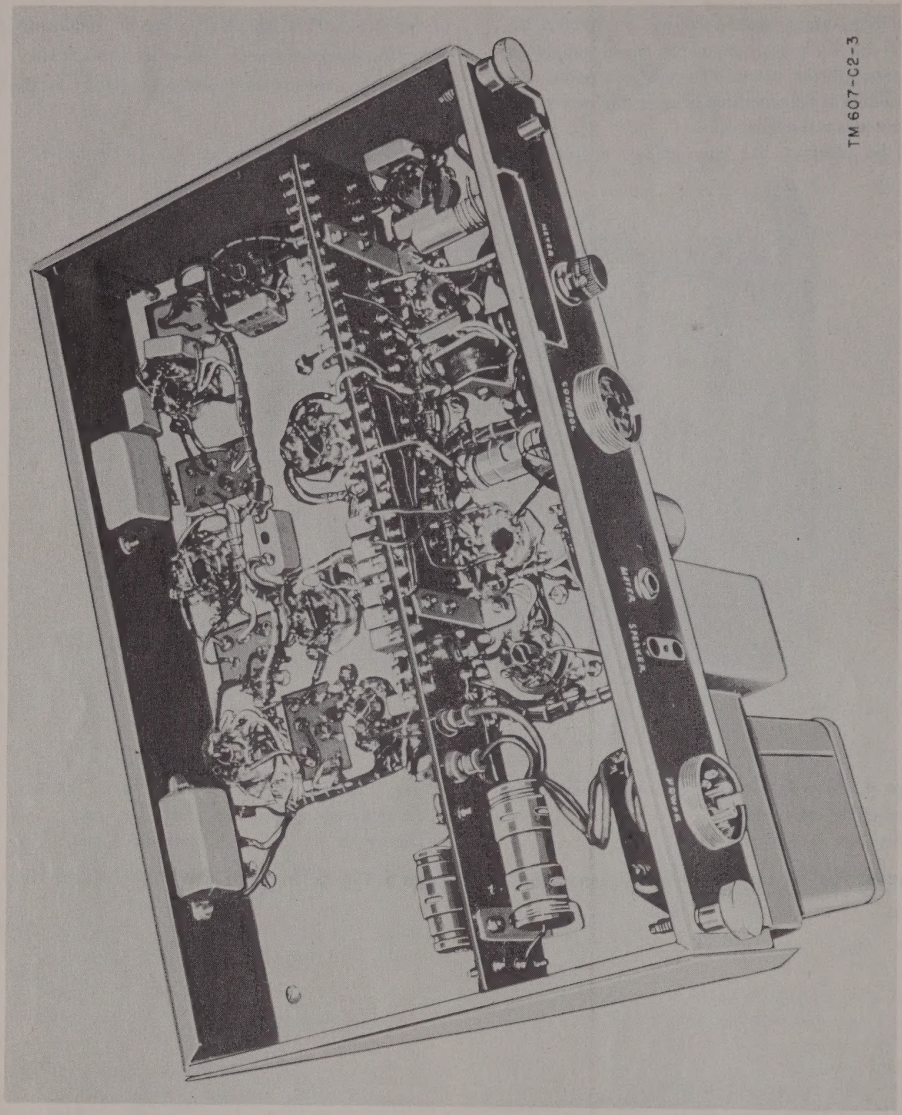


Figure 5.2. Radio Receiver R-237B/VR, bottom, viewed from front.

Page 5. Fig. 6. Insert figure 6.2 after figure 6.1.

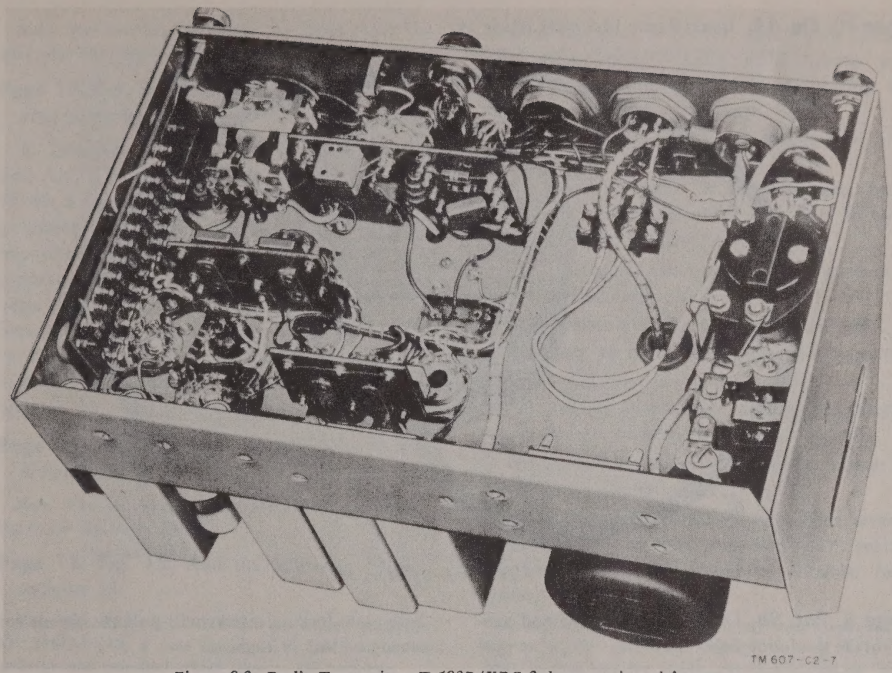


Figure 9.2. Radio Transmitter T-193B/VRC-2, bottom, viewed from rear.

Page 8. Fig. 10. Change caption to read: Control Head C-493(*)/VRC-2, front view.

Page 8. Par. 9. Delete paragraph 9a and substitute the following:

9. Installation

a. General Information. Study the installation instructions, technical manuals, and other information supplied with the equipment before attempting the installation. Make sure that the vehicle in which the radio set is to be installed has a 6-volt electrical system. Radio Set AN/VRC-2 is ordinarily supplied without the high-frequency crystals for the transmitter and receiver. It will be necessary to requisition the proper crystals for operation on the desired channel. Before proceeding with actual installation, lay out a definite plan for the exact location of the various components. Be sure that the plan provides for a short lead between the transmitter and antenna.

Page 9. Fig. 13. Insert figure 13.1 after figure 13.

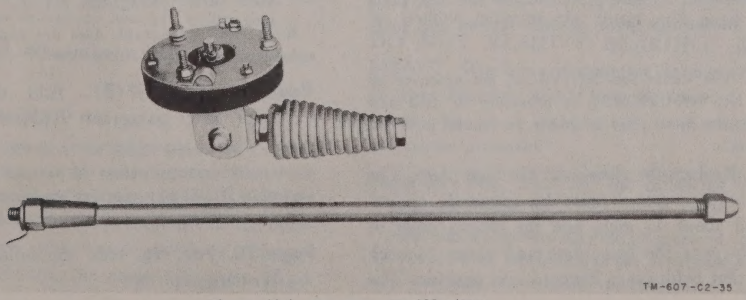


Figure 13.1. Antenna AT-129B/VR.

Page 10. Fig. 14. Insert figure 14.1 after figure 14.

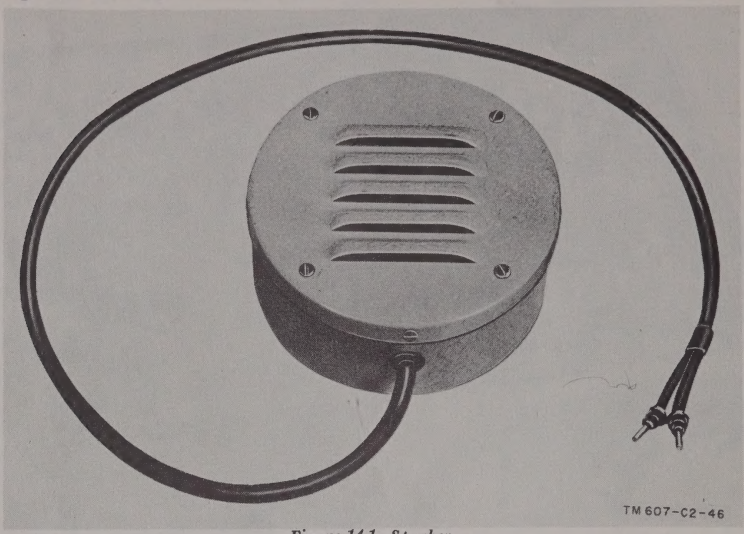


Figure 14.1. Speaker.

Page 8. Par. 9b. Delete paragraph 9b and substitute the following:

b. MOUNTING RECEIVER. (1) Secure the mounting plate to the vehicle body at the desired position, using nine ¼-inch bolts, nuts, and lockwashers supplied with the installation kit. Secure a bond strap to the center screw, securing the forward end of each mounting to the vehicle body.

Note. For Radio Sets AN/VRC-2, not procured on Order No. 20591-Ph-49, it is necessary to requisition the mounting plates and hardware for proper installation.

(2) Loosen the thumbscrews on the front panel of the radio receiver, and push the unit back on its base about ½ inch. This will unlock the rear edge of the chassis from the base plate. Lift the chassis off its base plate. Secure the base plate to the mountings with ¼-inch screws and lockwashers.

Note. For Radio Sets AN/VRC-2, not procured on Order No. 20591-Ph-49, it is necessary to drill new holes in the base plate in order to secure it to the mounting.

(3) Replace the chassis on the base plate. The base locking screws must be removed, or unscrewed about ¾ inch, and the chassis must be squarely over the base plate and about ½ inch to the rear before it is lowered into position. The base plate locking screws will pull the chassis forward and lock it in place.

Page 9. Par. 9e. Add the following "Note" to paragraph 9e.

Note. For Radio Sets AN/VRC-2, procured on Order No. 20591-Ph-49, the mounting bracket is attached to to the speaker.

Page 10. Par. 9f(2). Add the following "Note" after paragraph 9f(2).

Note. For Radio Sets AN/VRC-2, procured on Order No 20591-Ph-49, the three holes must be ¼ inch in diameter. In addition, a fourth hole centrally located between the other three must be made. This hole is 1⅜ inches in diameter.

Page 10. Par. 9f(3). Add the following "Note" after paragraph 9f(3).

Note. This paragraph does not apply to sets procurred on Order No. 20591-Ph-49.

Page 10. Par. 9f(3). Add the following "Note" after paragraph 9f(3).

Note. To install Radio Set AN/VRC-2 in a ¼-ton, 4 x 4 truck, it is necessary to procure the special installation kit. The kit contains the necessary hardware and detailed instructions for proper installations.

Page 10. Par. 9g. Add the following "Note" after paragraph 9g:

Note. For sets bearing Order No. 20591-Ph-49, the generator filter is not used.

Page 10. Par. 9g. Add the following paragraph after paragraph 9g.

h. INSTALLATION OF FUSE GUARD. For Radio Sets AN/VRC-2 procured on Order No. 20591-Ph-49, a fuse guard must be inserted in the ungrounded lead (red braid) to the battery. It is important to observe proper polarity in making connections to the battery. Do *not* attempt to reverse the leads with the transmitter in operation. Secure the fuse guard to the vehicle wall under the hood and as close to the battery as practicable. Use $\frac{5}{16}$-inch diameter bolts, nuts, and lockwashers.

Page 12. Fig. 17. Add the following "Note" to figure 17:

Note. The above figure does not apply to sets bearing Order No. 20591-Ph-49.

Page 12. Fig. 18. Add the following "Note" to figure 18.

Note. For Radio Sets AN/VRC-2 procured on Order No. 20591-Ph-49, a fuse box must be inserted in the underground terminal which goes to the battery.

Page 15. Fig. 20. For Radio Transmitter T-193B/VRC-2, change fuse note to read: USE 15 AMP FUSE.

Page 17. Par. 16. Change paragraph 16b(1) to read: While transmitting, hold the microphone close to the mouth and talk directly into it.

Page 19. Par. 19. In line 2 of "Action of condition" column, change "three-ourths" to read: three-fourths.

Page 22. Par. 25a. Add the following "Note" after paragraph 25a:

Note. For Radio Sets AN/VRC-2 bearing Order No. 20591-Ph-49, the dynamotor fuse has a fiber case.

Page 26. Par. 40. Add the following after paragraph 40.

40.1. Dynamotor

a. Lubrication of this equipment usually is not necessary. Under normal operating conditions, the ball bearings of the dynamotor passes a sufficient quantity of grease for the average life of the dynamotor. However, under some severe or abnormal operating conditions, the grease thins out. If additional lubricant is needed, apply only Grease, lubricating, special (GL) (U.S. Army spec 2-134) directly into the race of the bearing. Do not use grease that is too hard.

Note. Keep grease away from commutators or brushes.

b. Inspect brushes, brush assemblies, brush holders, and all miscellaneous parts after 50 hours of operation, as follows:

(1) Check and clean all accessible parts with a clean lintless cloth.

(2) Inspect all machine screws and nuts on all supports or mounting brackets and see that they are tight.

(3) Inspect brushes for defects and length; see if they are broken, cracked, or chipped.

(4) Inspect for loosely fastened or broken off brush shunts (pigtails).

(5) Check for burned-off or broken strands (kinked, worn, or otherwise damaged); replace with complete brush assemblies obtained from spares.

Note. During replacement, comply with proper markings on brushes and brush holders (+ to +; — to —). This is done not for electrical reasons, but for quick and proper replacement, thereby eliminating a *sand-in* operation. No sanding should be necessary to obtain a good brush fit with the original brushes if they are replaced correctly.

(6) Inspect brushes for length. Replace the brush if the brush spring extends less than ½ inch out of the holder when the brush is seated against the commutator.

(7) Inspect both of the commutators for cleanliness, excessive wear, flats, or any unevenesss. Replace a dynamotor having worn or otherwise damaged commutators with a new dynamotor.

(8) Check bearings for loose shaft fit and defects such as binding or excessive wear as noted by wobble between the inner and outer races. DO NOT REMOVE BEARINGS FROM SHAFT. Replace a dynamotor having defective or worn bearings with a new dynamotor.

Note. The above operation is to be performed only by qualified personnel.

Page 27. Par. 54. Add the following "Note" after paragraph 54.

Note. For Radio Sets AN/VRC-2 procured on Order No. 20591-Ph-49, lubrication of the dynamotor is necessary. See page 27 for proper procedures.

Page 30. Par. 59. Add the following "Note" after paragraph 59.

Note. For Radio Receiver R-237B/VR, V-1, V-2, V-3, V-4, V-6, V-7, V-8, and V-10 are JAN-6SG7GT.

Page 30. Par. 60. Line 14. Change "4,755 mc" to read: 4,755 kc.

Page 30. Par. 60. Change "(fig. 23)" in paragraph heading to read: (figs. 23 and 23.1).

Page 30. Par. 61. Change "(fig. 24)" in paragraph heading to read: (figs. 24 and 24.1).

Page 30. Par. 61. Add the following "Note" after paragraph 61:

Note. For Radio Receiver R-237B/VR, make the following changes in paragraph 61:

1. Change "JAN-6SD7GT" in the second line to JAN-6SG7GT.
2. "If an excessively * * * through capacitor C-10" to read:

   Variable trimmer capacitor C-9 resonates the plate coil of transformer T-2R at the signal frequency. The amplified r-f voltage induces a voltage in the secondary coil of T-2R which is resonated by capacitor C-76 and impressed upon the mixer grid through capacitor C-10. The tertiary winding of the transformer together with capacitor C-75 forms a wave trap to allow rejection of unwanted frequencies.

Page 31. Fig. 23. Change caption to read: Radio Receiver R-237/VR and Radio Receiver R-237A/VR, block diagram.

Page 31. Fig. 23. Insert figure 23.1 after figure 23.

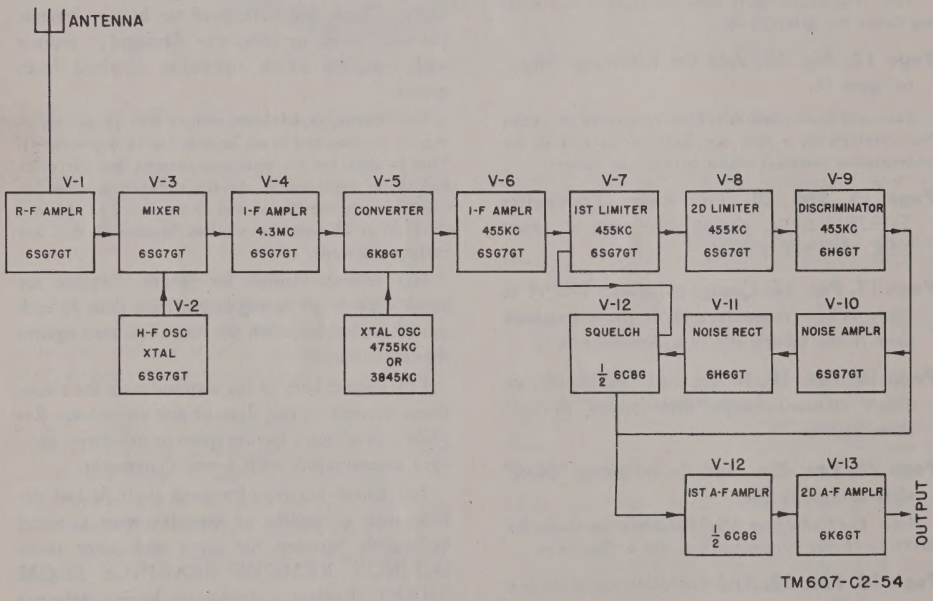


Figure 23.1. Radio Receiver R-237B/VR, block diagram.

Page 31. Fig. 24. Insert figure 24.1 after figure 24.

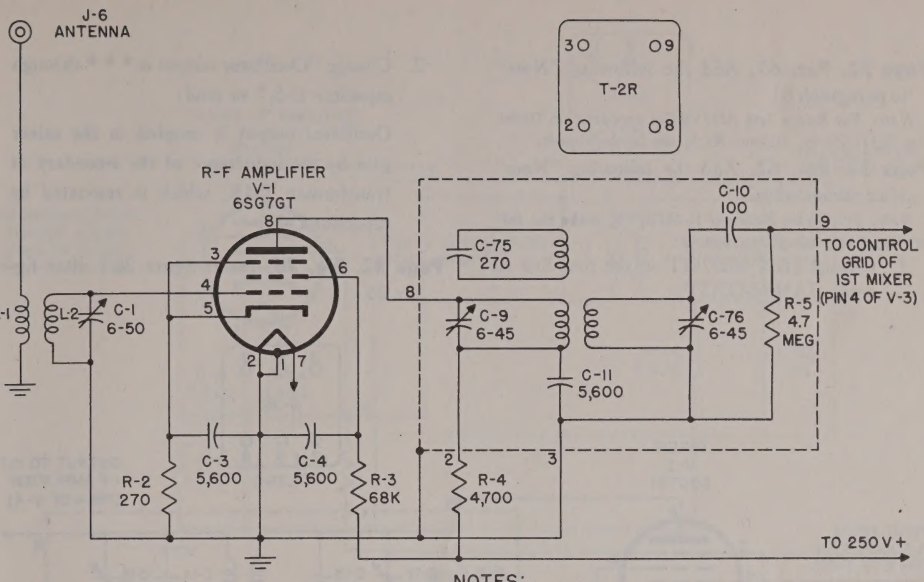


Figure 24.1. Radio Receiver R-237B/VR, r-f amplifier, block diagram.

Page 32. Par. 62. Change "(fig. 25)" in paragraph heading to read: (figs. 25 and 25.1).

Page 32. Fig. 25. Insert figure 25.1 after figure 25.

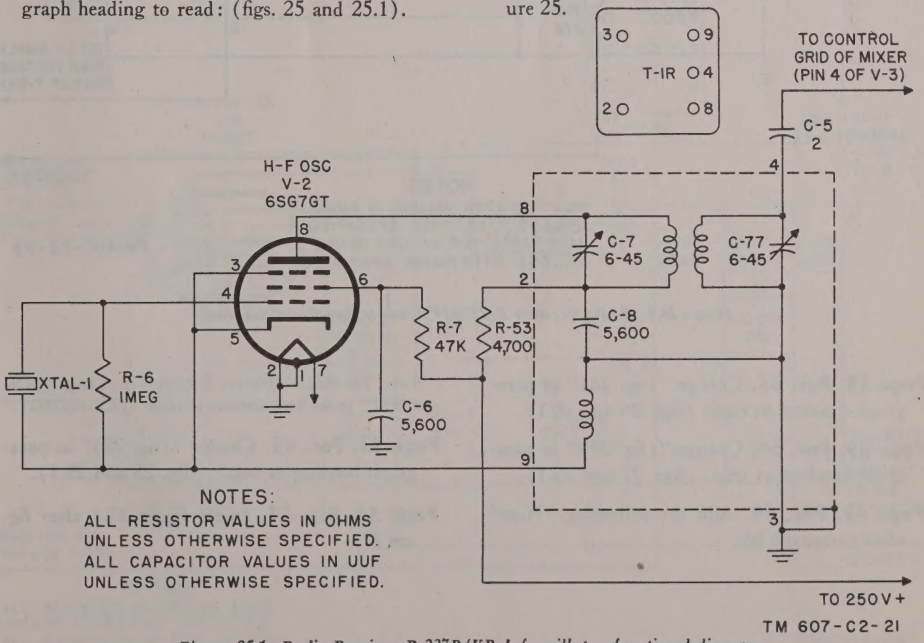


Figure 25.1. Radio Receiver R-237B/VR, h-f oscillator, functional diagram.

Page 32. Par. 61. Add the following "Note" to paragraph 61.

Note. For Radio Sets AN/VRC-2 procured on Order No. 20591-Ph-49, resistor R1 is not in the circuit.

Page 32. Par. 62. Add the following "Note" after paragraph 62.

Note. For Radio Receiver R-237B/VR, make the following changes in paragraph 62:

1. Change JAN-6SD7GT in the first line to read: JAN-6SG7GT.
2. Change "Oscillator output is * * * through capacitor C-5," to read:

   Oscillator output is coupled to the mixer grid by the inductance of the secondary of transformer T-1R, which is resonated by capacitor C-77.

Page 32. Fig. 26. Insert figure 26.1 after figure 26.

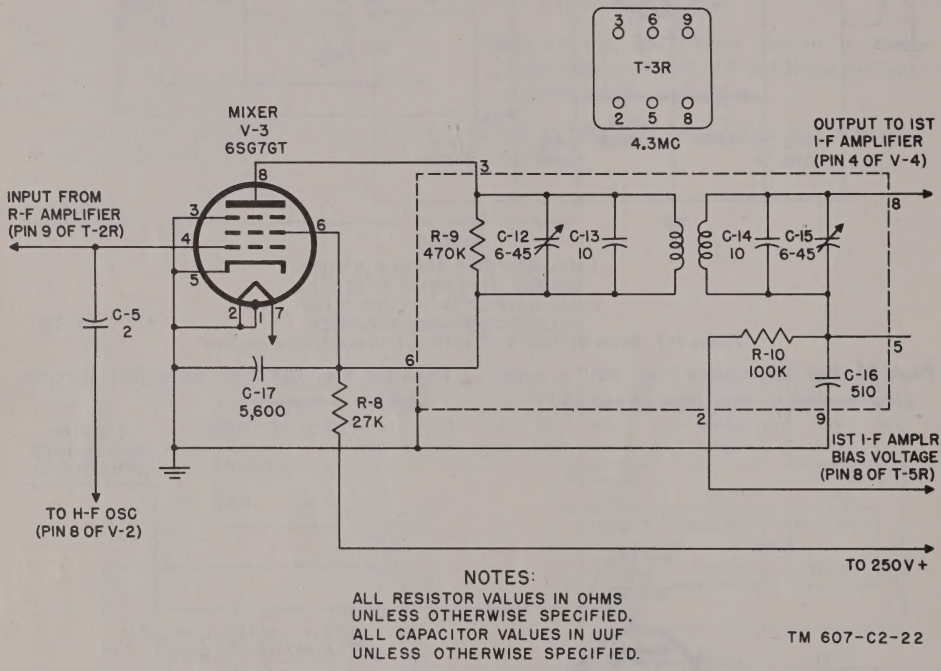


Figure 26.1. Radio Receiver R-237B/VR, mixer, functional diagram.

Page 33. Par. 63. Change "(fig. 26)" in paragraph heading to read: (figs. 26 and 26.1).

Page 33. Par. 64. Change "(fig. 27)" in paragraph heading to read: (figs. 27 and 27.1).

Page 33. Par. 64. Add the following "Note" after paragraph 64.

Note. For Radio Receiver R-237B/VR, change "JAN-6SD7GT" in the first sentence to read: "JAN-6SG7GT."

Page 33. Par. 65. Change "(fig. 28)" in paragraph heading to read: (figs. 28 and 28.1).

Page 33. Fig. 27. Insert figure 27.1 after figure 27.

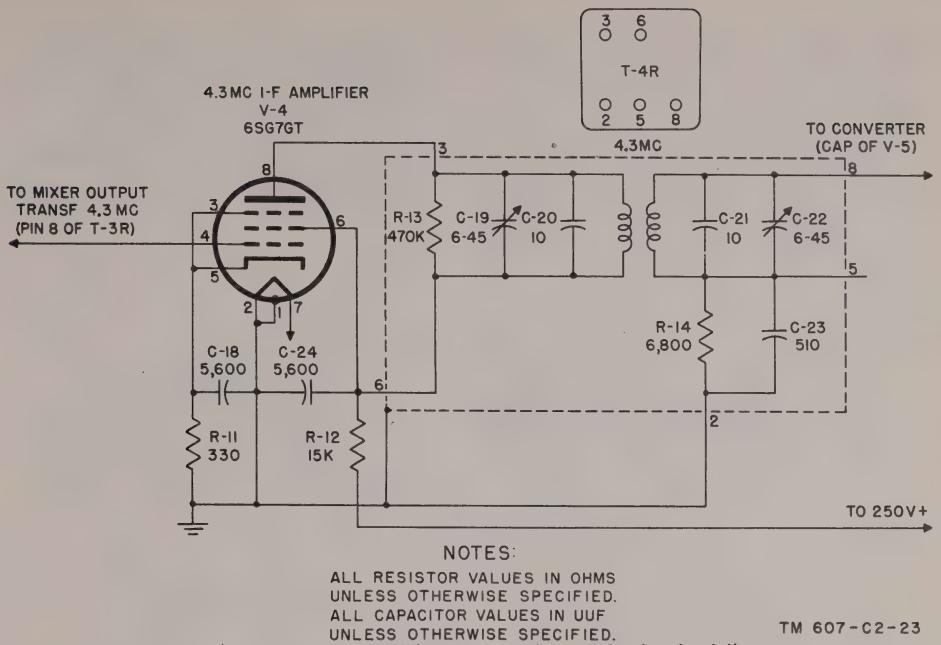


Figure 27.1. Radio Receiver R-237B/VR, 4.3 mc i-f amplifier, functional diagram.

Page 34. Fig. 28. Insert figure 28.1 after figure 28.

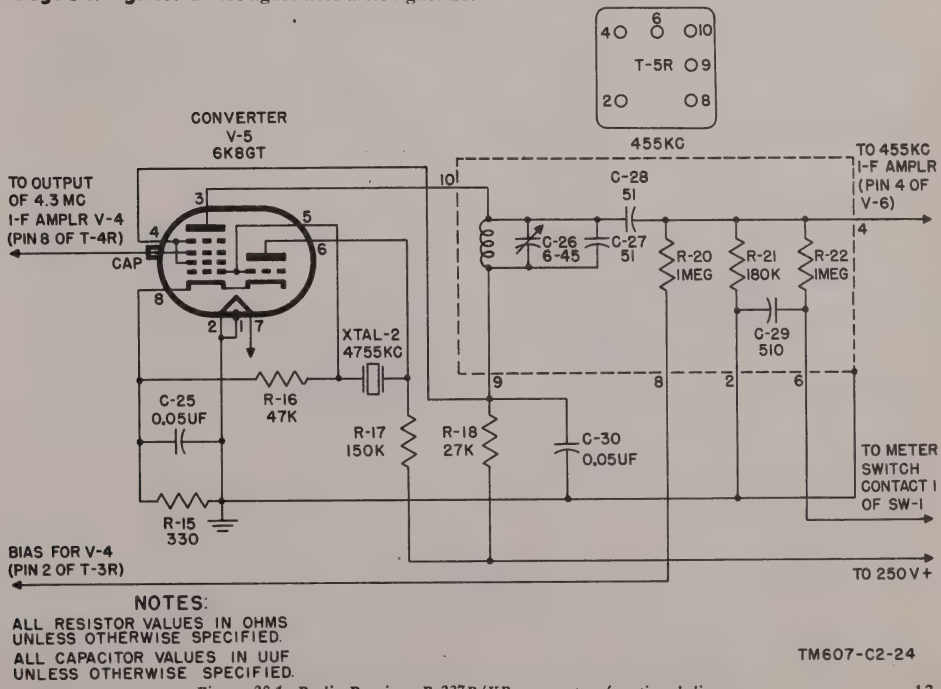


Figure 28.1. Radio Receiver R-237B/VR, converter, functional diagram.

Page 34. Par. 66. Change "(fig. 29)" in paragraph heading to read: (figs. 29 and 29.1).

Page 35. Par. 66. Add the following "Note" after paragraph 66.

Note. For Radio Receiver R-237B/VR, change JAN-6SD7GT in the first sentence to read: JAN-6SG7GT.

Page 35. Par. 67. Change "(fig. 30)" in paragraph heading to read: (figs. 30 and 30.1).

Page 35. Par. 67. Add the following "Note" after paragraph 67.

Note. For Radio Receiver R-237B/VR, change JAN-6SD7GT in the first sentence to read: JAN-6SG7GT.

Page 35. Fig. 29. Insert figure 29.1 after figure 29.

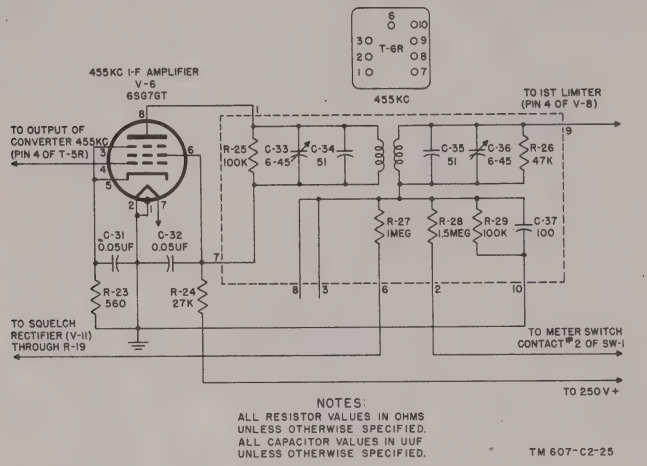


Figure 29.1. Radio Receiver R-237B/VR, 455-kc i-f amplifier, functional diagram.

Page 36. Fig. 30. Insert figure 30.1 after figure 30.

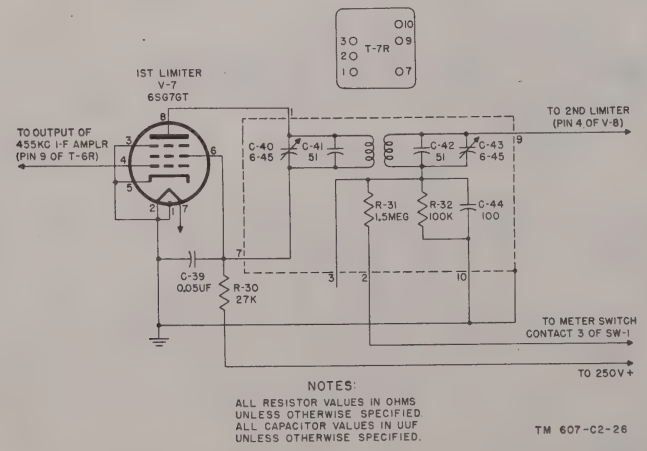


Figure 30.1. Radio Receiver R-237B/VR, first limiter, functional diagram.

Page 36. Par. 68. Change "(fig. 31)" in paragraph heading to read: (figs. 31 and 31.1).

Page 37. Fig. 31. Insert figure 31.1 after figure 31.

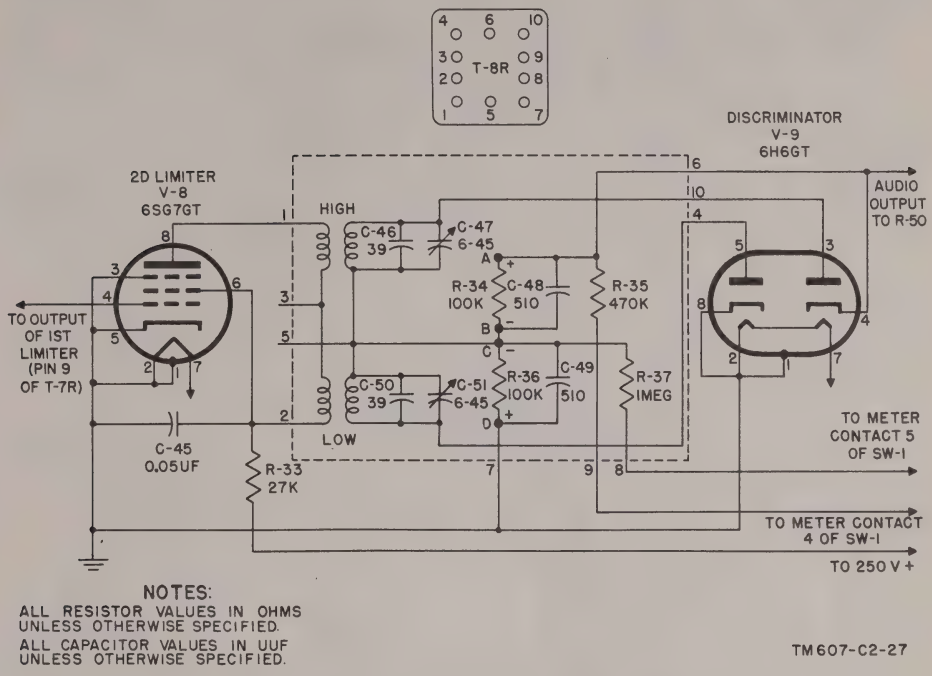


Figure 31.1. Radio Receiver R-237B/VR, second limiter and discriminator, functional diagram.

Page 37. Par. 69. Change "(fig. 33)" in paragraph heading to read: (figs. 33 and 33.1).

Page 37. Par. 69a. Add the following "Note" after paragraph 69a.

Note. For Radio Receiver R-237B/VR, change JAN-6SD7GT in the first sentence to JAN-6SG7GT.

Page 38. Par. 32. Add the following "Note" to fig. 32.

Note. For Radio Transmitter T-193B/VRC-2:

1. Change "430" to read: 420.
2. Change "480" to read: 490.

Page 38. Par. 70. Line 14. Change "pin number 4" to read: cap.

Page 38. Fig. 33. Insert figure 33.1 after figure 33.

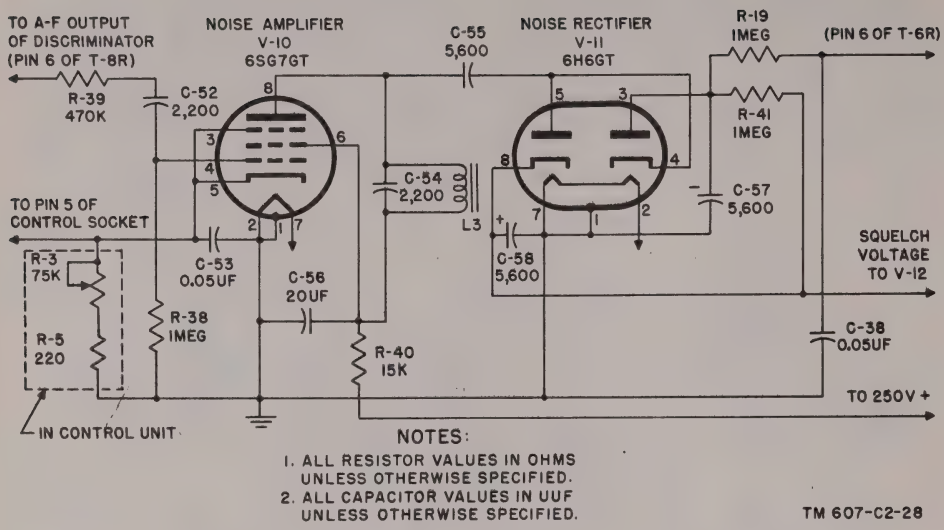


Figure 33.1. Radio Receiver R-237B/VR, noise amplifier and noise rectifier, functional diagram.

Page 38. Par. 70. Change "(fig. 34)" in paragraph heading to read: (figs. 34 and 34.1).

Page 39. Fig. 34. Insert figure 34.1 after figure 34.

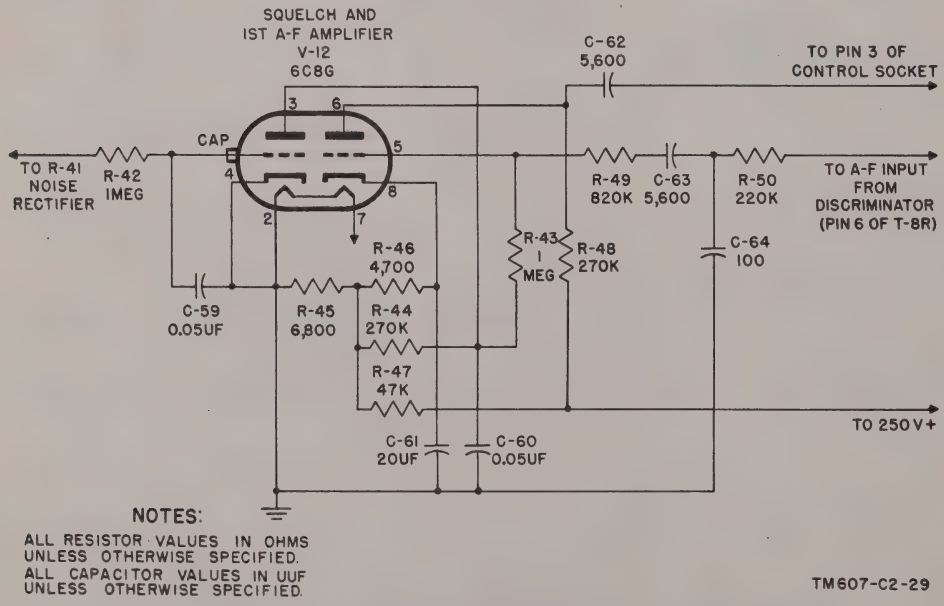


Figure 34.1. Radio Receiver R-237B/VR, squelch and first a-f amplifier, functional diagram.

Page 39. Par. 71. Change "(fig. 35)" in paragraph heading to read: (figs. 35 and 35.1).

Page 39. Par. 71. Add the following "Note" after paragraph 71.

Note. For Radio Receiver R-237B/VR, delete the sentence "The inductor L-8 * * * the higher frequencies."

Page 39. Par. 72. Line 7. Change M4 to read: M2.

Page 39. Par. 72. Add the following "Note" after paragraph 72.

Note. For Radio Sets AN/VRC-2 bearing Order No. 20591-Ph-49, relay K1 should read: relay RY-1.

Page 40. Fig. 35. Insert figure 35.1 after figure 35.

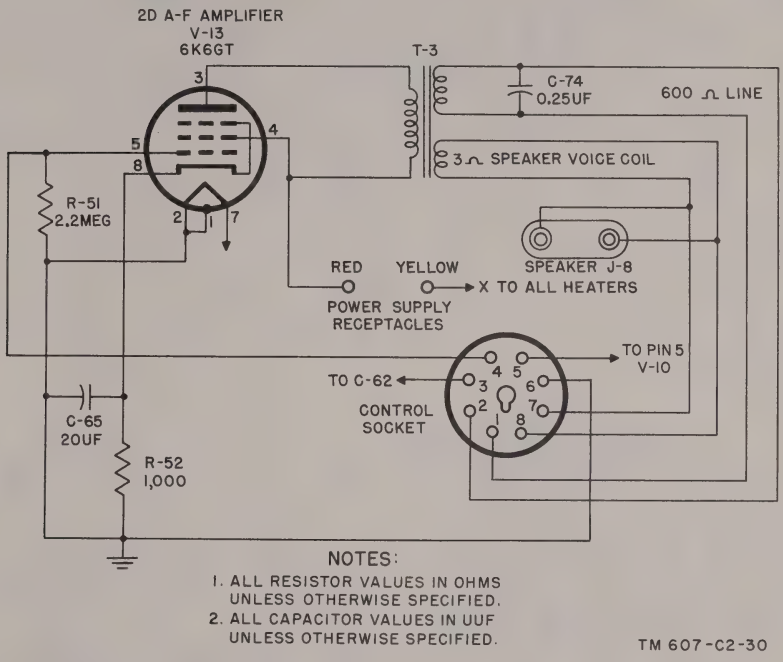


Figure 35.1. Radio Receiver R-237B/VR, second a-f amplifier, functional diagram.

Page 40. Par. 75. Change "(fig. 38)" in paragraph heading to read: (figs. 38 and 38.1).

Page 41. Fig. 36. Add the following "Note" to figure 36.

Note. For Radio Receiver R-237B/VR, change R1 and R2 to 47 ohms.

Page 41. Par. 75. Add the following "Note" after paragraph 75.

Note. For Radio Transmitter T-193(*)/VRC-2, capacitor C-2 is used only when the transmitter is to be used at frequencies below 33.0 mc. When used, this capacitor parallels the plate tuning capacitor C-37.

Page 42. Fig. 38. Change caption to read: Radio Transmitter T-193/VRC-2 and Radio Transmitter T-193A/VRC-2, oscillator and phase shifter, functional diagram.

Page 42. Fig. 38. Insert figure 38.1 after figure 38.

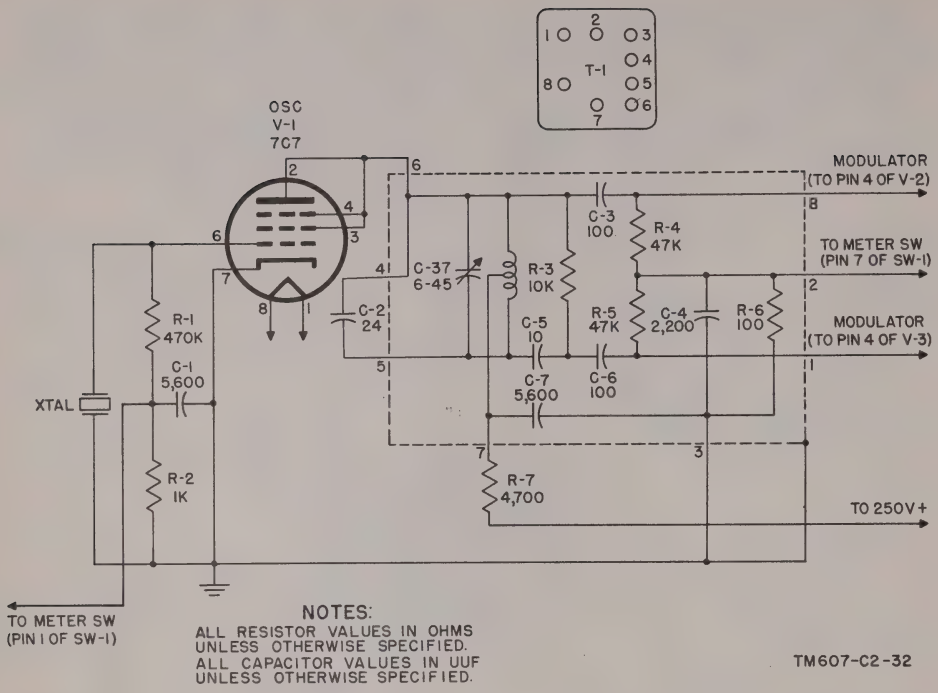


Figure 38.1. Radio Transmitter T-193B/VRC-2, oscillator and phase shifter, functional diagram.

Page 42. Par. 77. Change "(fig. 40)" in paragraph heading to read: (figs. 40, 40.1, and 40.2).

Page 43. Par. 78. Change "(fig. 41)" in paragraph heading to read: (figs. 41, 41.1, and 41.2), and add the following "Note" after paragraph 78.

Note. C19 is not found in Radio Transmitter T-193B/VRC-2.

Page 43. Fig. 39. Add the following "Note" to figure 39.

Note. For Radio Transmitter T-193B/VRC-2:

1. Change C8 from 50 UF to 45 UF.
2. Change C12 from 5,000 to 5,600.
3. Change C13 from 2,000 to 2,200.
4. Change C38 from 5-44 to 6-45.

Page 44. Fig. 40. Insert figure 40.2 after figure 40.1.

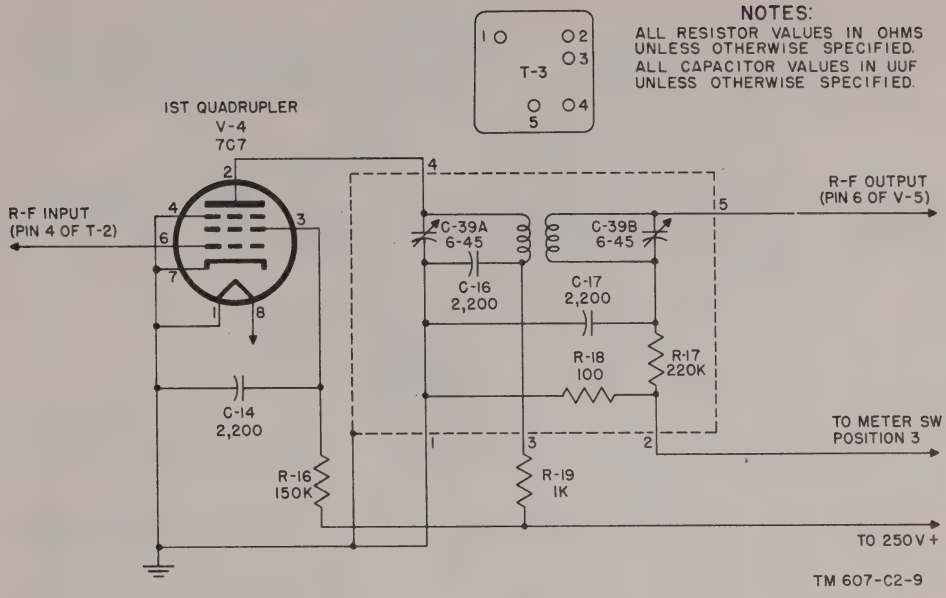


Figure 40.2. Radio Transmitter T-193B/VRC-2, first quadrupler, functional diagram.

Page 44. Par. 80. Add the following "Note" to paragraph 80.

Note. For Radio Transmitter T-193B/VRC-2:

1. Change relay K-3 to read: relay RY-1.
2. R-26 is replaced by R-26, R-37, R-38, R-39, each 12K.

Page 44. Par. 81. Add the following "Note" after paragraph 81.

Note. For Radio Transmitter T-193B/VRC-2: a dynamotor supplies the high voltage for the transmitter. The output of the dynamotor is filtered by parallel capacitors C-35 and C-36.

Page 44. Par. 81. Add the following after paragraph 81.

81.1. Dynamotor Power Supply

The functional characteristics of a dynamotor are shown in figure 44.1. The heavy lines indicate the low-voltage motor circuit. Current from the battery flows through the field coils and the motor winding of the armature, setting up a magnetic field around both. The fields are set up opposite each other to cause the armature to rotate. The armature and field windings are in parallel, which results in a fairly constant armature speed under varying load conditions. The high-voltage winding, represented by the finer lines, is wound on the motor armature to save space and weight. When the high-voltage winding rotates, it cuts the common magnetic field and generates a voltage which is available at the high-voltage commutator.

Page 45. Fig. 41. Insert figure 41.2 after figure 41.1.

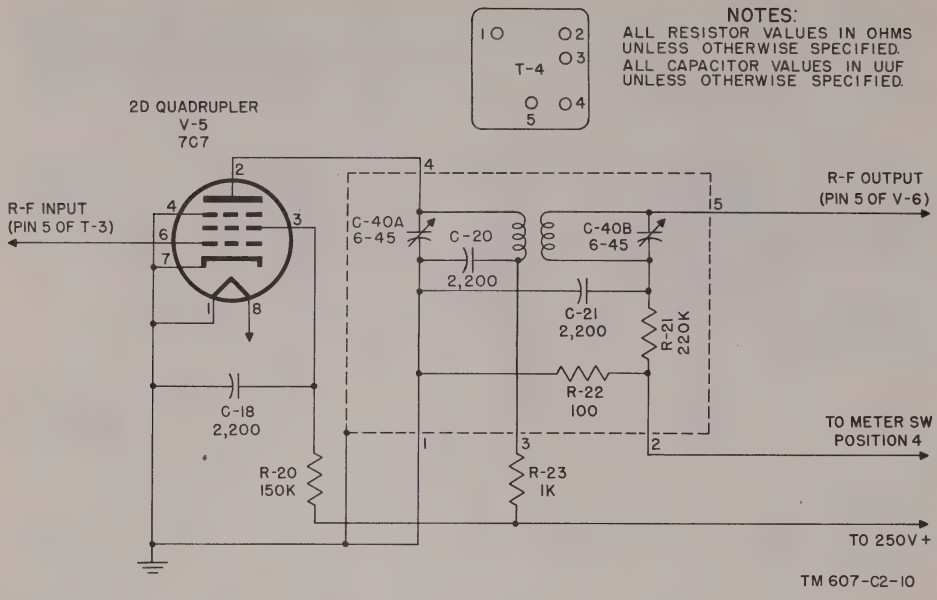


Figure 41.2. Radio Transmitter T-193B/VRC-2, second quadrupler, functional diagram.

Page 45. Fig 42. Add the following "Note" to figure 42.

Note. For Radio Transmitter T-193B/VRC-2:

1. Change C22 from 5,000 to 5,600.
2. Change C41 from 5-44 to 6-45.
3. Change C23 from 2,000 to 2,200.
4. Change C24 from 50 to 51.

Page 45. Par. 82. Change "(figs. 60 and 61)" in paragraph heading to read (figs. 60, 61, 61.1, and 61.2).

Page 46. Fig 43. Add the following "Note" to figure 43.

Note. For Radio Transmitter T-193B/VRC-2:

1. Change C26 from 5,000 to 5,600.
2. Change C27 from 2,000 to 5,600.
3. Change C28 from 35 to 5-35.
4. Change C29 from 140 to 9.5-175.
5. Change C34 from 2,000 to 2,200.
6. Change R25 from 0.5 to 0.51.
7. Replace R-26 with 4 resistors (R-26, R-37, R-38, and R-39) each 12K.

Page 46. Fig. 44. Add the following "Note" to figure 44.

Note. This figure applies only for Radio Transmitter T-193/VRC-2 and Radio Transmitter T-193A/VRC-2.

Page 46. Fig. 44. Insert figure 44.1 after figure 44.

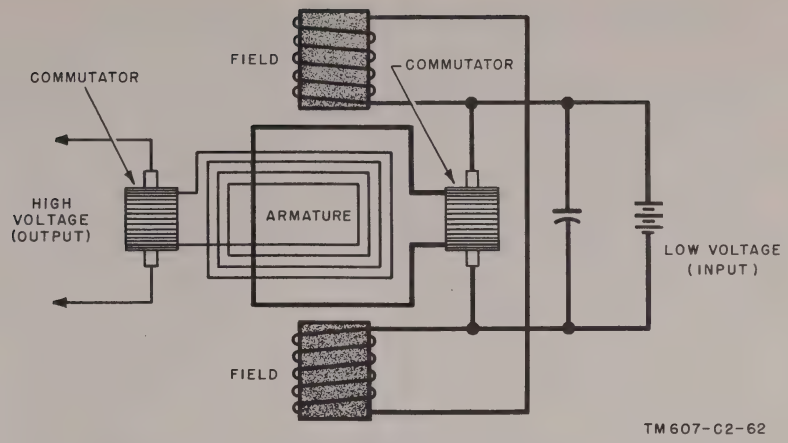


Figure 44.1. Radio Transmitter T-193B/VRC-2, functional diagram of dynamotor.

Page 47. Par. 82. Add the following "Note" after paragraph 82c.

Note. For Radio Transmitter T-193B/VRC-2:

1. Change K1 to read RY-1.
2. Change K2 to read RY-2.
3. Change K3 to read RY-3.

Page 48. Par. 84. Add the following "Note" after paragraph 84a.

Note. For Radio Receiver R-237B/VR, the signal generator used to aline the receiver must go to 420 kc.

Page 50. Par. 87. Add the following "Note" to paragraph 87.

Note. For Radio Transmitter T-193B/VRC-2, there is a dynamotor power supply.

Page 51. Par. 89. Add the following "Note" to paragraph 89a.

Note. For Radio Transmitter T-193B/VRC-2, the voltage should be approximately 630 volts.

Page 51. Par. 89a. Add the following table after the table in paragraph 89a.

Tube	Pin Connections — Volts*							
	1	2	3	4	5	6	7	8
V-1	0	100	100	100	0	0	0	5
V-2	0	155	85	0	100	0	7	5
V-3	0	155	85	0	100	0	7	5
V-4	0	155	125	0	0	0	0	5
V-5	0	155	125	0	0	0	0	5
V-6	0	5	245	245	0	0	0	0
V-7	5	180	–10	0	–	–	–	–

*This table applies only to Radio Transmitter T-193B/VRC-2.

Page 51. Par. 89. Delete the table in paragraph 89b and substitute the following:

Tube	Pin Connections — Ohms							
	1	2	3	4	5	6	7	8
V-1	0	10K	10K	10K	0	470K	0	0
V-2	0	5900	55K	47K	21.5K	24K	330	0
V-3	0	5900	55K	47K	21.5K	24K	330	0
V-4	0	5900	150K	0	0	220K	0	0
V-5	0	5900	150K	0	0	220K	0	0
V-6	0	0	4900	7K	220K	INF	0	0
V-7	0	48K*	22K	0.5	0	–	–	–
XTAL	INF	0	1100	470K	INF	–	–	–

*For Transmitter T-193/VRC-2, this reading is 20K.

Page 51. Par. 90. Add the following table after the table in paragraph 90 a.

Tube	Pin Connections — Volts*								
	1	2	3	4	5	6	7	8	cap
V-1	0	0	2	0	2	105	5	200	
V-2	0	0	0	–2.5	0	200	5	200	
V-3	0	0	0	0	0	80	5	80	
V-4	0	0	2	0	2	135	5	135	
V-5	0	0	87	87	–2.5	35	5	2	0
V-6	0	0	2.5	0	2.5	105	5	105	
V-7	0	0	0	0	0	70	5	70	
V-8	0	0	0	–5	0	95	5	95	
V-9	0	0	–16	–0.7	–3	0	5	0	
V-10	0	0	0.75	0	0.75	160	5	160	
V-11	0	0	0	0	0	0	5	0	
V-12	0	0	18	0	5	82	5	35	0
V-13	0	0	205	212	0	0	5	20	

*This table for Radio Receiver R-237B/VR only.

ADDENDA

TO

SUPPLEMENT TO TM 11-607, RADIO SET AN/VRC-2

Page 9. Reference to page 10, par. 9g. Next to last line.

Change "$^{5}/_{16}$-inch" to read: $^{3}/_{16}$-inch.

Page 9. Reference to page 15, fig. 20. Last line.

Change to read as follows: USE 20 AMP FUSE.

Page 39. Second item.

Change "C-59" in the Ref symbol column to read: C-39.

Page 40. First item.

Change "C-39" in the Ref symbol column to read: C-59.

Change in Name of part and description column the following:

Line 1. Change "two sect" to read: three sect.

Change "CP53B63F503V" to read: CP53B5EF503V.

Page 44. Sixth item in Name of part and description column.

Change "20 amp, 32V;" to read: 15 amp, 25V;.

Change "#ACU" to read: #AGU.

Page 45. Par 4. Fifth item in Name of part and description column.

Line 1. Change "15 amp;" to read: 20 amp;.

ADDENDA

TO

SUPPLEMENT TO TM 11-607, RADIO SET AN/VRC-2

Page 11. Fig. 24.1 and Page 52. Fig. 62.1.

Add R-54 10K between pins #4 and #5 of V-1.

Page 11. After Fig. 24.1.

Add the following: Page 32. Par. 61. Resistor R-54 is used to lower impedance of antenna tuning circuit. This will prevent oscillation when antenna is removed for alinement purposes.

Page 40. At bottom of page.

Ref. symbol column. Add R-54.

Name of part and description column. Add RESISTOR, fixed: composition; JAN type RC20BF103K; 10,000 ohms ±10%; ½ W; spec. JAN-R-11.

Function of part column. Add R-54: stop oscillation in alinement.

Page 52. Par. 90b. Delete the table in paragraph 90b and substitute the following:

Tube	Pin Connections — Ohms								
	1	2	3	4	5	6	7	8	cap
V-1	0	0	270	0*	270	100K	0	40K	
V-2	0	0	0	1.0MEG	0	80K	0	40K	
V-3	0	0	0	4.7MEG	0	64K	0	64K	
V-4	0	0	330	1.2MEG	330	50K	0	50K	
V-5	0	0	64K	65K	50K	190K	0	330	
V-6	0	0	560	180K	560	62K	0	64K	
V-7	0	0	0	100K	0	64K	0	64K	
V-8	0	0	0	100K	0	64K	0	64K	
V-9	0	0	100K	200K	100K	INF	0	0	
V-10	0	0	250	1.0MEG	250	50K	0	50K	
V-11	0	0	2MEG	INF	INF	INF	0	3MEG	
V-12	0	0	270K	0	1.3MEG	300K	0	11.5K	
V-13	0	0	36K	36K	380K	INF	0	1K	

*For Radio Receiver R-237/VR, Pin 4 of V1 is 100 M.

Page 54. Par. 47. Insert figure 47.2 after figure 47.1.

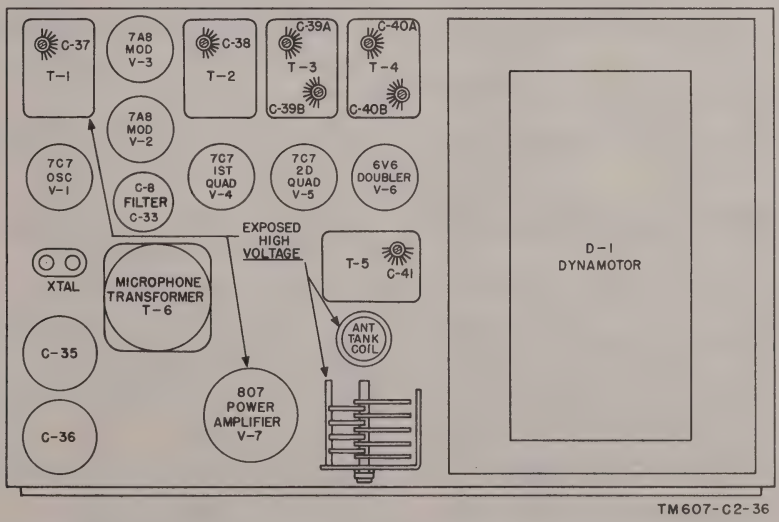


Figure 47.2. Radio Transmitter T-193B/VRC-2, chassis layout, showing location of alinement control.

Page 55. Par. 95. Add the following "Note" to the table in paragraph 95.

Note. For Radio Transmitter T-193B/VRC-2, the following tank coil turns apply:

Frequency range (mc)	*Number of turns*
30.0 - 33.0	8
33.0 - 37.0	7
37.0 - 40.	6

Page 55. Par. 95. Line 12. After the word micrometer, insert the following: (Marion type HM-3, 0-50 microamperes, or equivalent).

Page 55. Par. 95. Add the following table after the second table in paragraph 95.

Switch position	Circuit (for T-193B/VRC-2, only)	Alinement control	Meter reading
1	Oscillator grid current	T-1	20
2	First quadrupler grid current	T-2	25
3	Second quadrupler grid current	T-3	20
4	Doubler grid current	T-4	9
5	Power-amplifier grid current	T-5	28
PA.	Power-amplifier cathode current	Plate	38
MOD.	Modulator grid current		20

Page 55. Par. 95. Line 2 of Note. Change "10 percent" to read: 25 percent.

Page 55. Par. 96. Add the following "Note" after paragraph 96.

Note. For Radio Transmitter T-193B/VRC-2, the reading should be approximately 20 on the meter.

Page 56. Par. 98. Add the following "Note" after paragraph 98.

Note. For Radio Transmitter T-193B/VRC-2, adjust until a peak meter reading of approximately 20 is obtained.

Page 56. Par. 100. Add the following "Note" after paragraph 100:

Note. For Radio Transmitter T-193B/VRC-2, a peak reading of approximately 28 should be obtained.

Page 56. Par. 102. Add the following "Note" after paragraph 102:

Note. For Radio Transmitter T-193B/VRC-2, continue this adjustment until the meter reads 38 at the dip obtained by rotating the PLATE capacitor to resonance.

Page 57. Par. 104. Add the following table after the table in paragraph 104c:

Switch position	Circuit (R-237B/VR)	Alinement control	Meter reading
1	Low frequency i-f amplifier grid current	T3R, T4R	0
2	First limiter grid current	T5R, T6R	6
3	Second limiter grid current	T7R	33
4	Discriminator (HIGH)	T8R	0
5	Discriminator (LOW)	T8R	9

Page 57. Par. 105c. Change (Galvin type P8100) to read: (Marion type HM-3, 0-50 microamperes).

Page 57. Par. 107. In the second sentence, change (Galvin type P-8100) to read: (Marion type H-30-50 microamperes).

Page 57. Par. 107. Add the following "Note" after paragraph 107.

Note. For Radio Receiver R-237B/VR, change "13,000 microvolts" to read: 15,000 microvolts.

Page 58. Par. 108. Add the following "Note" after paragraph 108:

Note. For Radio Receiver R-237B/VR, change "300 uV" to read: 330 uV.

Page 58. Par. 109. Add the following "Note" after paragraph 109c:

Note. For Radio Receiver R-237B/VR, change the second sentence to read: Check the alinement by moving the signal generator dial to 490 kc and then to 420 kc (35 kc above and below the 455-kc intermediate frequency).

Page 58. Par. 110. Add the following "Note" after paragraph 110:

Note. For Radio Receiver R-237B/VR, change the last sentence to read: An input signal of approximately 6.5 uV should produce a meter reading of 15 ua.

Page 58. Par. 111. Add the following at the end of the sixth sentence: (For Radio Receiver R-237B/VR, approximately 2 uV input should produce a meter reading of 18 ua.)

Page 60. Fig. 49. Insert figure 49.2 after figure 49.1.

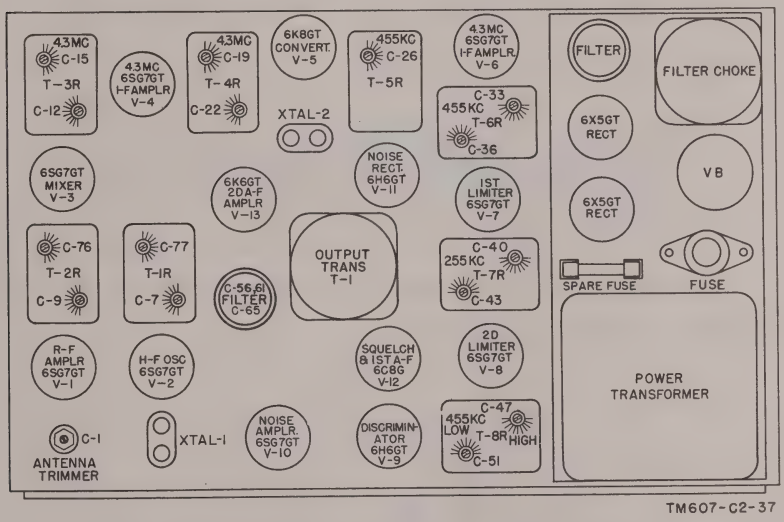


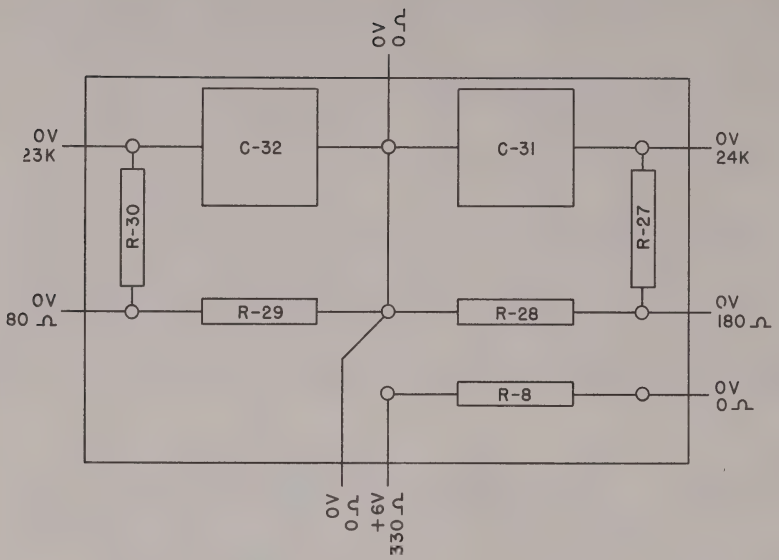
Figure 49.2. Radio Receiver R-237B/VR, chassis layout.

Page 61. Fig. 50. Change caption to read: Radio Transmitter T-193/VRC-2 and Radio Transmitter T-193A/VRC-2, terminal board layout.

Page 62. Fig. 51. Change caption to read: Radio Transmitter T-193/VRC-2 and Radio Transmitter T-193A/VRC-2, resistor strip layout.

Page 62. Fig. 52. Change caption to read: Radio Receiver R-237/VR and Radio Receiver R-237A/VR, resistor strip layout.

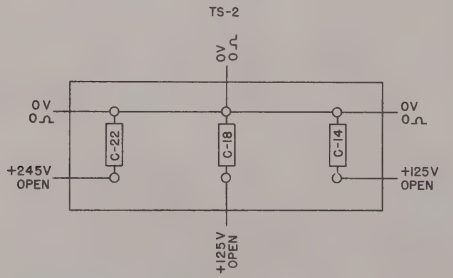
Page 62. Fig. 51. Insert figure 51.1 after figure 51.



NOTES:
(A) RESISTANCE MEASUREMENTS TAKEN TO GROUND (CHASSIS) WITH POWER SOURCE REMOVED. VOLTAGE MEASUREMENTS TAKEN TO GROUND (CHASSIS) USING A 1,000-OHM-PER-VOLT METER.
(B) 6 VOLTS INPUT TO 18 FOOT POWER CABLE.
(C) OUTPUT LOAD AT TRANSMITTER 34 Ω. TM 607-C2-38

Figure 51.1. Radio Transmitter T-193B/VRC-2, terminal strip, TS-1, layout.

Page 62. Fig. 51. Insert figure 51.2 after figure 51.1.



NOTES:
(A) RESISTANCE MEASUREMENTS TAKEN TO GROUND (CHASSIS) WITH POWER SOURCE REMOVED. VOLTAGE MEASUREMENTS TAKEN TO GROUND (CHASSIS) USING A 1,000-OHM-PER-VOLT METER.
(B) 6 VOLTS INPUT TO 18 FOOT POWER CABLE.
(C) OUTPUT LOAD AT TRANSMITTER 34 Ω.

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Figure 51.2. Radio Transmitter T-193B/VRC-2, terminal strip, TS-2, layout.

Page 62. Fig. 51. Insert figure 51.3 after figure 51.2.

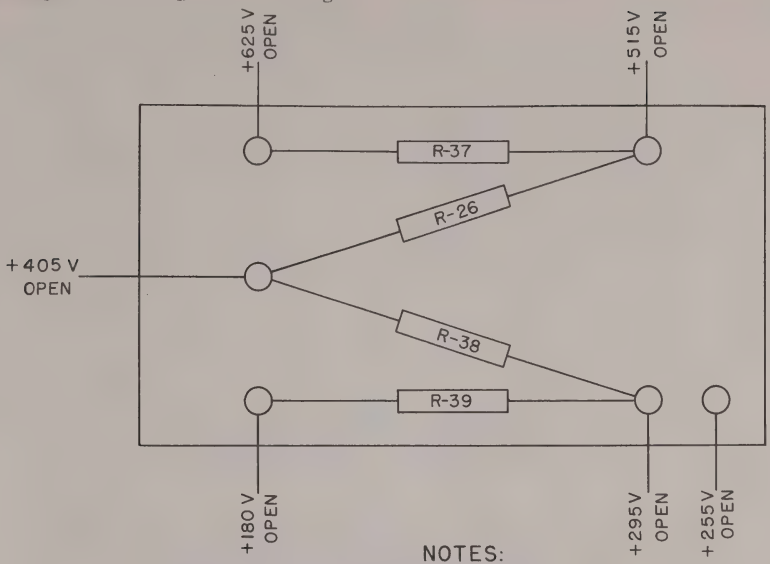


Figure 51.3. Radio Transmitter T-193B/VRC-2, terminal strip, TS-3, layout.

Page 62. Fig. 51. Insert figure 51.4 after figure 51.3.

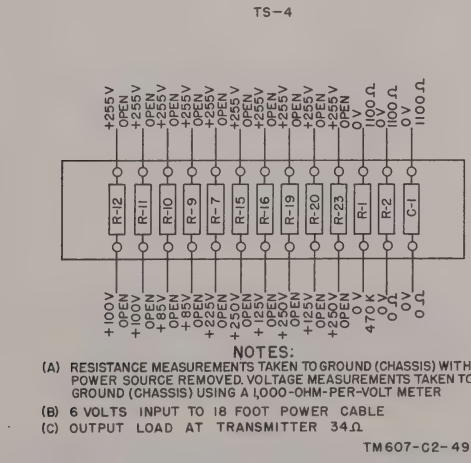
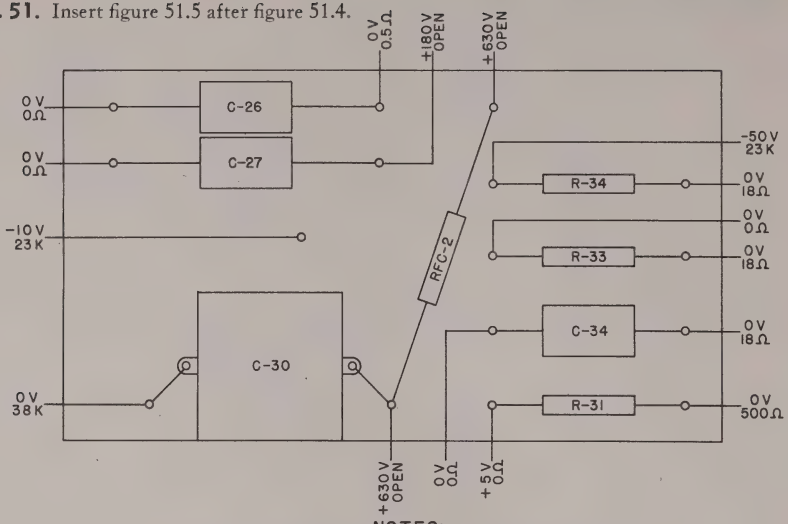


Figure 51.4. Radio Transmitter T-193B/VRC-2, terminal strip, TS-4, layout.

Page 62. Fig. 51. Insert figure 51.5 after figure 51.4.



NOTES:

(A) RESISTANCE MEASUREMENTS TAKEN TO GROUND (CHASSIS) WITH POWER SOURCE REMOVED. VOLTAGE MEASUREMENTS TAKEN TO GROUND (CHASSIS) USING A 1,000-OHM-PER-VOLT METER

(B) 6 VOLTS INPUT TO 18 FOOT POWER CABLE

(C) OUTPUT LOAD AT TRANSMITTER 34Ω

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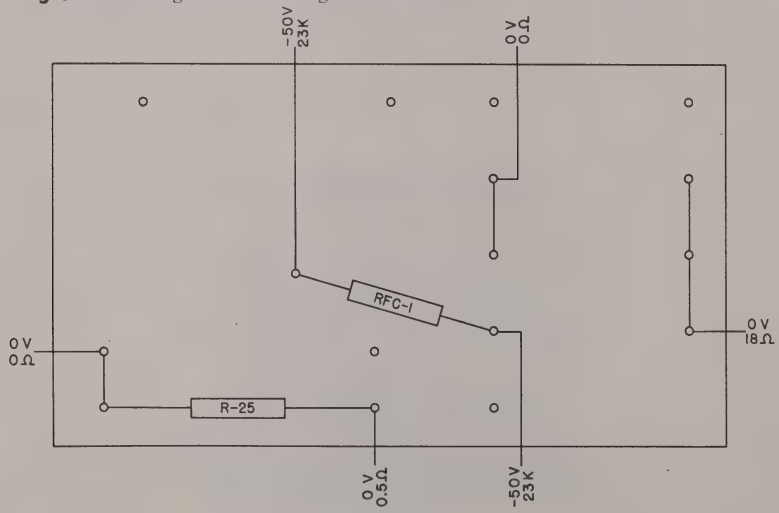
Figure 51.5. Radio Transmitter T-193B/VRC-2, terminal strip, TS-5, layout.

Page 62. Fig. 51. Insert figure 51.6 after figure 51.5.



NOTES:

(A) RESISTANCE MEASUREMENTS TAKEN TO GROUND (CHASSIS) WITH POWER SOURCE REMOVED. VOLTAGE MEASUREMENTS TAKEN TO GROUND (CHASSIS) USING A 1,000-OHM-PER-VOLT METER

(B) 6 VOLTS INPUT TO 18 FOOT POWER CABLE.

(C) OUTPUT LOAD AT TRANSMITTER 34Ω

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Figure 51.6. Radio Transmitter T-193B/VRC-2, terminal strip, TS-5 (front), layout.

Page 62. Fig. 52. Insert figure 52.1 after figure 52.

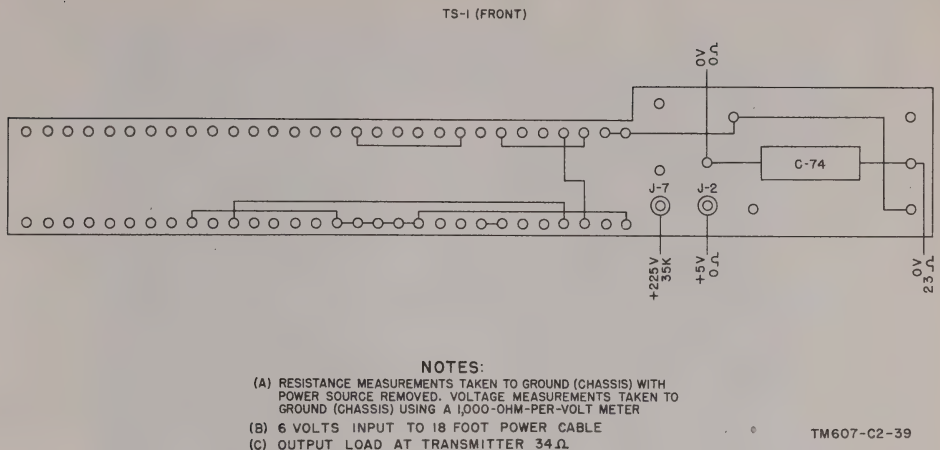


Figure 52.1. Radio Receiver R-237B/VR, terminal strip, TS-1 (front), layout.

Page 62. Fig. 52. Insert figure 52.2 after figure 52.1.

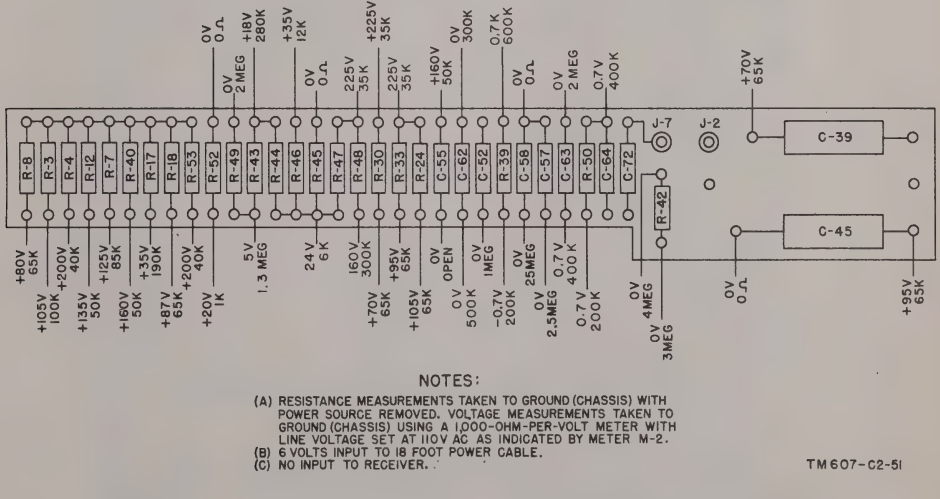


Figure 52.2. Radio Receiver R-237B/VR, terminal strip, TS-1 (rear), layout.

Page 63. Fig. 53. Change "V6" to the left of V5 to read: V4.

Page 63. Fig. 53. Insert figure 53.2 after figure 53.1.

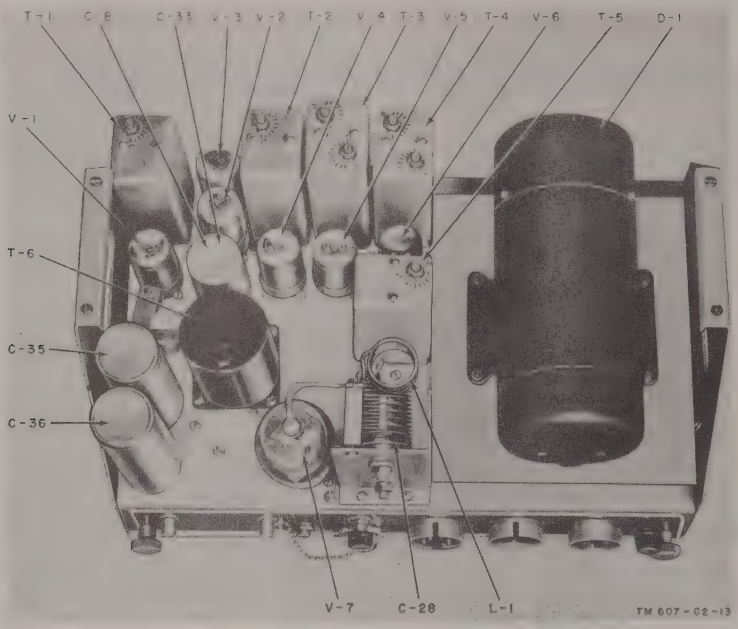


Figure 53.2. Radio Transmitter T-193B/VRC-2, top view, showing location of parts.

Page 64. Fig. 54. Insert figure 54.2 after figure 54.1.

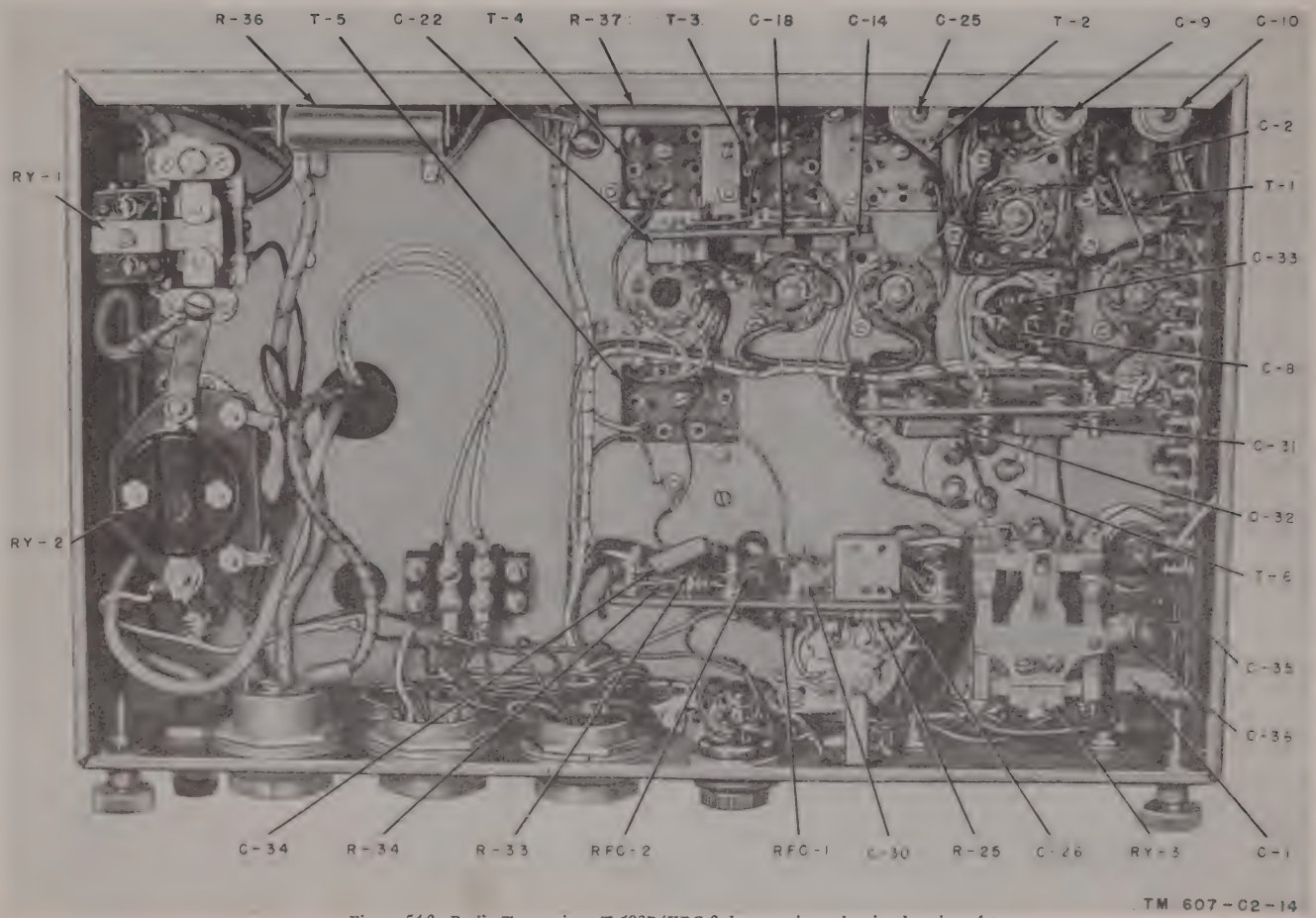


Figure 54.2. Radio Transmitter T-193B/VRC-2, bottom view, showing location of parts.

Page 65. Fig. 56. Insert figure 56.2 after figure 56.1.

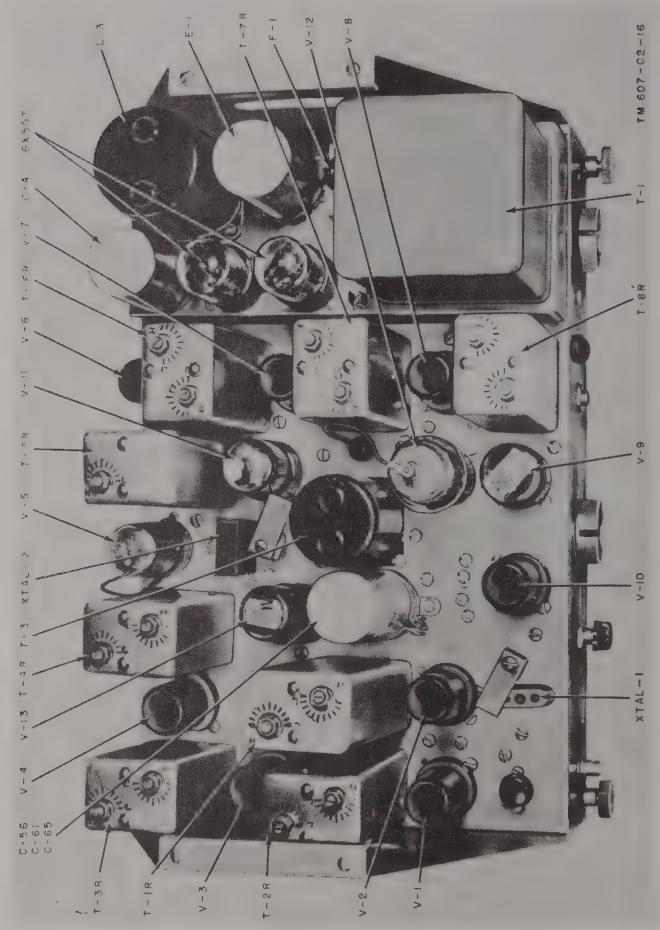


Figure 56.2. Radio Receiver R-237B/VR, top view, showing location of parts.

Page 66. Fig. 57. Insert figure 57.2 after figure 57.1.

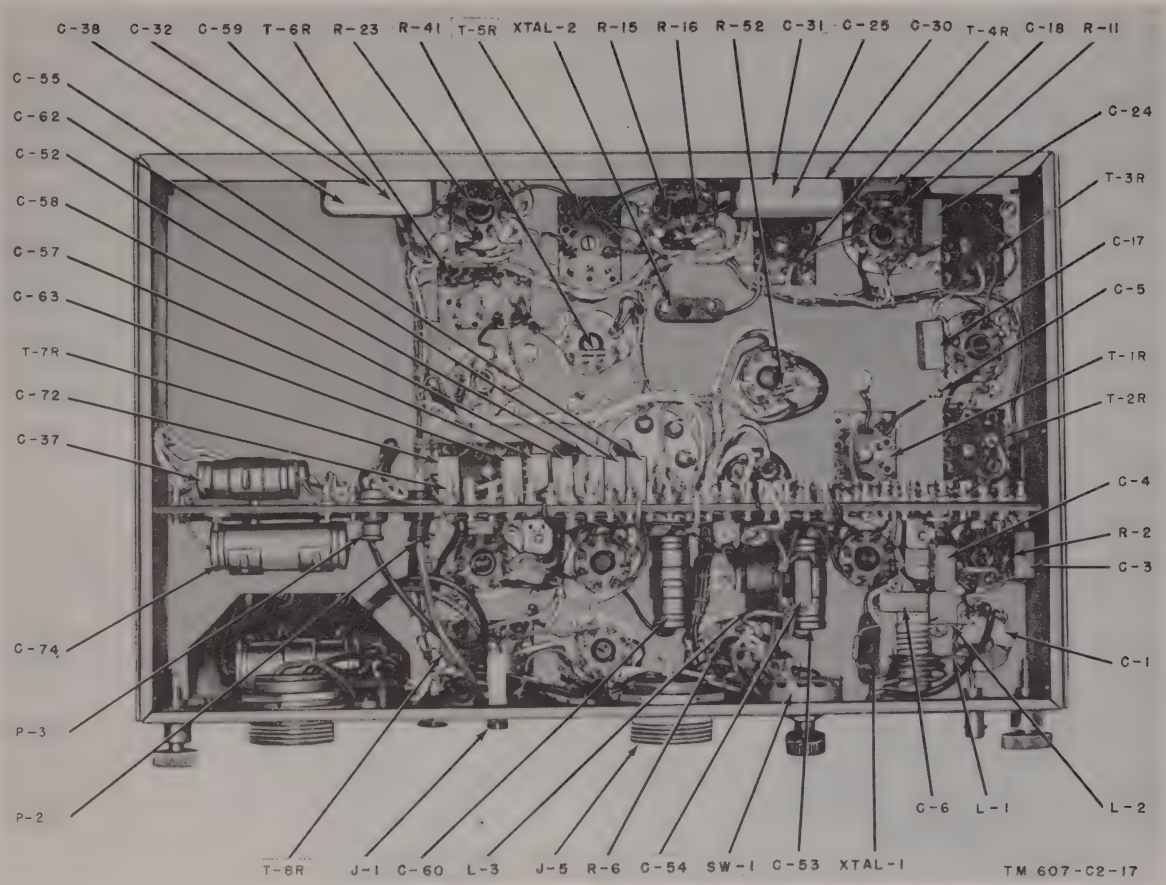


Figure 57.2. Radio Receiver R-237B/VR, bottom view, showing location of parts.

Page 67. Fig. 58. Insert figure 58.2 after figure 58.1.

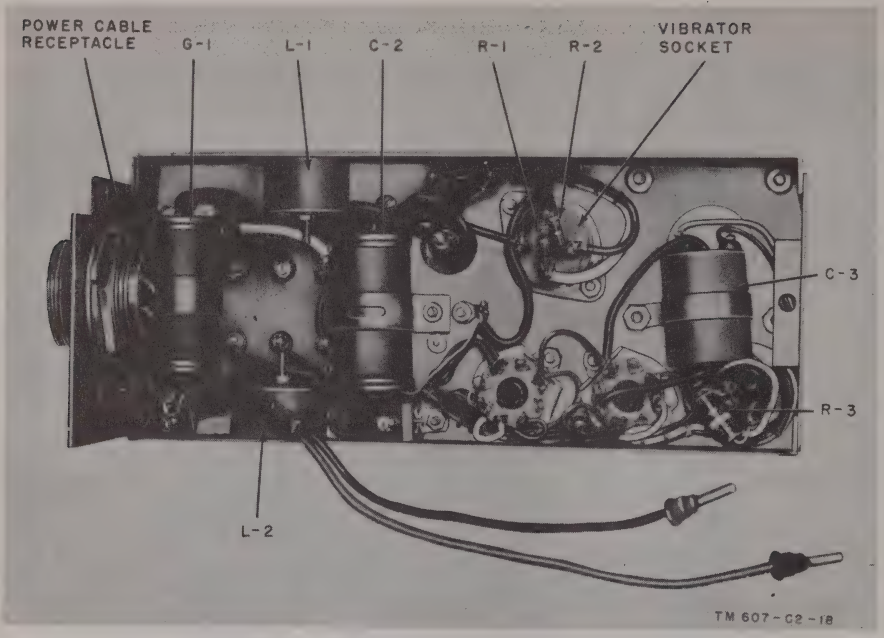


Figure 58.2. Radio Receiver R-237B/VR, power supply, bottom view.

Page 68. Fig. 59. Change caption to read: Control Head C-493/VRC-2, case removed and parts identified.

Page 69. Fig. 60. Change caption to read: Control Head C-493/VRC-2 and Control Head C-493A/VRC-2, complete schematic diagram.

Page 69. Fig. 60. Change "M4" in center of diagram and in function column to read: M2.

Page 69. Fig. 60. Insert figure 60.1 after figure 60.

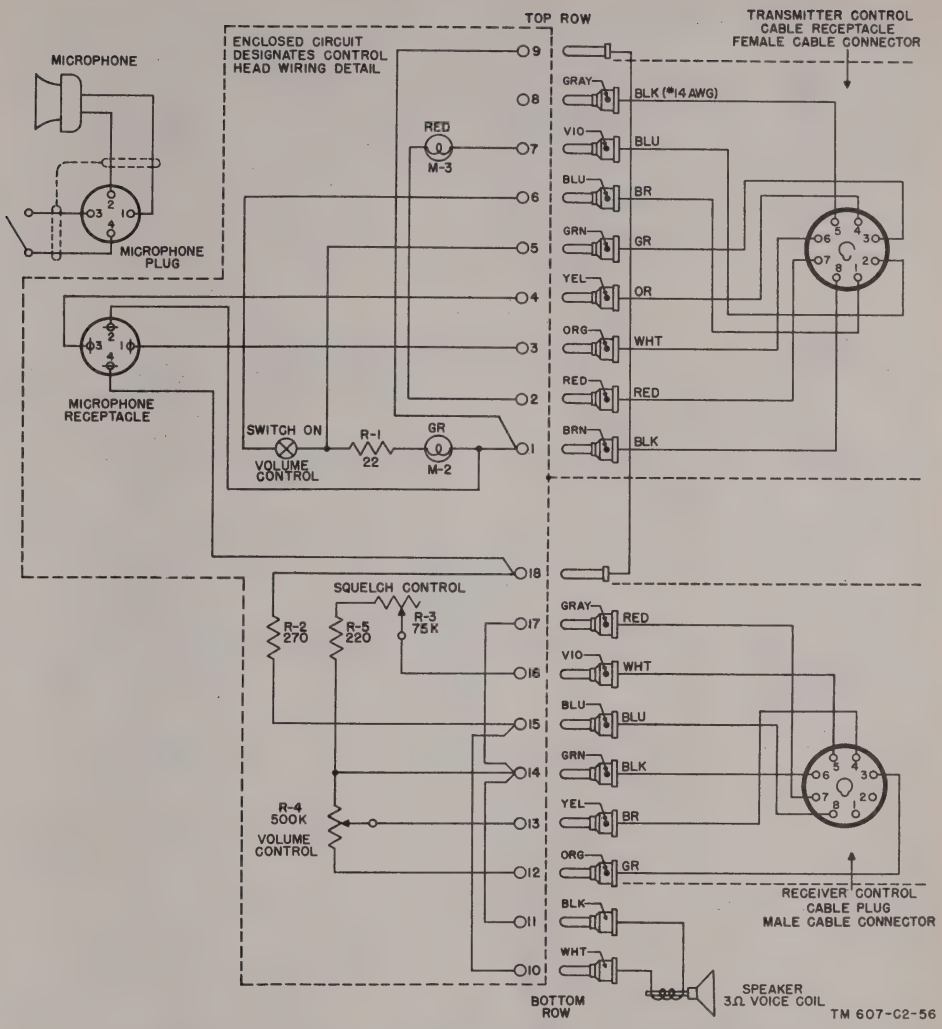
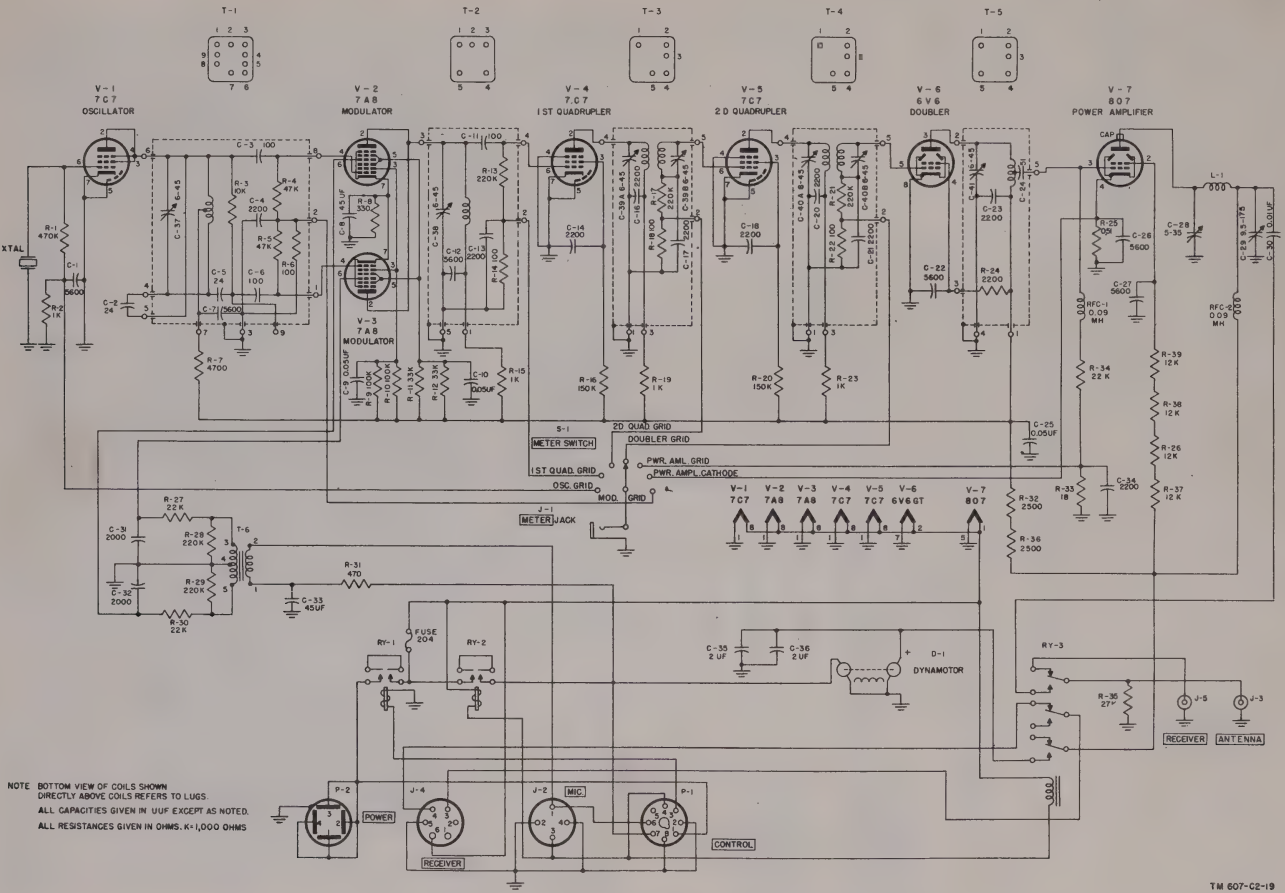


Figure 60.1. Control Head C-493B/VRC-2, complete schematic diagram.

Figure 61. Added figure 61.2 after figure 61.1.



NOTE BOTTOM VIEW OF COILS SHOWN DIRECTLY ABOVE COILS REFERS TO LUGS.
ALL CAPACITIES GIVEN IN UUF EXCEPT AS NOTED.
ALL RESISTANCES GIVEN IN OHMS. K=1,000 OHMS

TM 607-C2-19

Figure 61.2. Radio Transmitter T-193B/VRC-2, complete schematic diagram.

Figure 62. Change caption to read: Radio Receiver R-347/VR and Radio Receiver R-237A/VR, complete schematic diagram.

Page 77. App II. Change heading to read:

IDENTIFICATION TABLE OF PARTS (FOR ITEMS PROCURED ON ORDERS NO. 23054-PH-43, 24673-PH-43, 29040-PH-45, AND 12732-PH-47).

Page 77. App II. Add the following after appendix II:

APPENDIX III
IDENTIFICATION TABLE OF PARTS

Note. The fact that a part is listed in this table is not suffcient basis for requisitioning the item. Requisitions must cite an authorized basis, such as T/O&E's, T/A's, T/B's, SIG 7-8-10, SIG 10, list of allowances of expendable material, or another authorized supply basis. The Department of the Army Supply Catalog applicable to the equipment covered in this manual is SIG 7&8-AN/VRC-2. For an index of available supply catalogs in the Signal portion of the Department of the Army Supply Catalog, see the latest issue of SIG I, Introduction and Index.

1. Radio Set AN/VRC-2 Miscellaneous Components

Ref symbol	Name of part and description	Function of part
E-1	ANTENNA: whip type: for transmitting-receiving; approx ¼ wavelength at operating freq; adj lg 78" to 88"; Fed Tele & Rad type 123AZ or equal.	Radiates or receives r-f energy.
	BASE, antenna: consists of a sandwich of two ⅛" thk rubber, one ⅜" thk phenolic and one ⅛" thk cad pl steel disks, perforated for 3 mtg studs at 120° on a 3⅜" diam circle and a center hole for the RF lead-through; U shaped yoke 1½" wd x 2-5/16" h x 3/16" thk and pl brass; tapered helical, cad pl, steel spring 3½" lg x 0.50"-1.25" diam of 0.25" diam wire Sig C spec 72-53; Utility Electronic part/dwg #PC-1425, PA-1435, PA-1439, PB-1445, PB-1444.	Insulator.
	ANTENNA SECTION: consists of hollow cad pl brass tube 18" lg x ½" diam OD x 0.0625 thk with ½" threaded end (½"-20 NC-2); collet 2" lg x 0.359" diam, slotted, brass, cad pl; cad pl brass collet nut ¾" hex, inside thread (½"-20, NC-2, ½" d) Sig C spec 72-52; Utility Electronics part/dwg #PC-1425, PA-1434, PA-1433, PA-1432, PA-1431.	
	ANTENNA SECTION: consists of solid steel, cad pl, tapered rod 0.225" —0.100" diam x 16 ft lg, start of taper 22⅜" from base; with ⅛" spherical radius protector tip 11/32" h; Utility Electronics part/dwg #PB-1430, PB-1429, PB-1425.	
W-3	CABLE ASSEMBLY: special purpose: type SJ cable, stranded twenty #32 AWG, two #18 AWG; 300 vdcw; ⅜" OD rubber circular jacket per Sig C spec 71-4945; 4 ft lg excluding terminations; two Amphenol part #71-1M plugs (1 yellow, 1 black) at one end, other end wired stripped ½"; u/w Radio Set AN/VRC-2 Speaker; Utility Electronics part/dwg #PB-1407.	Loudspeaker cable.

1. Radio Set AN/VRC-2 Miscellaneous Components (contd).

Ref symbol	Name of part and description	Function of part
W-7	CABLE ASSEMBLY, power: cable 8 cond shielded; cond #18 AWG (41/34 tinned), 1 cond #14 AWG (65/34 tinned); RI of 0.120" OD for #18 AWG and 0.140" OD for #14 AWG; shield of tinned copper with minimum of 75% coverage with cotton serving beneath and over rubber singles; overall sheath of black polyvinyl covering shield braid to 0.530" OD; 26" lg excluding terminations; Amphenol plug #79-06 MT at one end and Amphenol #79-06 FIT at other; u/w Sig C Radio Set AN/VRC-2; Utility Electronics part /dwg #PB-1225.	Transmitter-receiver inter-connecting cable.
W-8	CABLE ASSEMBLY, power: 2 cond, each #4 AWG stranded; RI, 600 v working; 0.405" diam; 16 ft lg excluding term; one Amphenol plug #92-FIT at one end and two T & B #F-73 term or equal at other; u/w JAN Radio Set AN/VRC-2; Utility Electronics part/dwg #PB-1228.	Power cable.
W-5	CABLE ASSEMBLY, RF: RG-50/U cable; 27" excluding terminations; JAN type RG-59/U cable with JAN plugs UG-260/U at each end; Utility Electronic part/dwg #PB-1229.	Transmitter-receiver inter-connecting cable.
W-6	CABLE ASSEMBLY, RF: RG-59/U cable; 40" excluding terminations; JAN type RG-59/U cable with JAN plug UG-260/U at one end; other end, insulation peeled for 1" and 7" lg x ¼" thk braid soldered to shielding; Utility Electronics part/dwg #PB-1230.	Antenna lead-in cable.
W-2	CABLE ASSEMBLY, special purpose: cable of 8 cond shielded; 7 cond #16 AWG (41/34 tinned) 1 cond #14 AWG (65/34 tinned); RI of 0.120" OD for #18 AWG and 0.140" OD for #14 AWG; shield of tinned copper with minimum of 75% coverage with cotton serving beneath and over rubber singles; overall sheath of black polyvinyl covering shield braid to 0.530" OD; 16 ft lg excluding terminations; Amphenol plug #79-08MT at one end and 6 Amphenol plugs #71-ILT at other; u/w Sig C Radio Set AN/VRC-2; Utility Electronics part/dwg #PB-1227.	Receiver control cable.
W-1	CABLE ASSEMBLY, special purpose: cable of 8 cond shielded; 7 cond #18 AWG (4.1/34 tinned) 1 cond #14 AWG (65/34 tinned); RI of 0.120" OD for #18 AWG and 0.140" OD for #14 AWG; shield of tinned copper with minimum of 75% coverage with cotton serving beneath and over rubber singles; overall sheath of black polyvinyl covering shield braid to 0.530" OD; 16 ft lg excluding terminations; Amphenol plug 7908-FIT at one end and 8 Amphenol plugs #71-ILT at other; u/w Sig C Radio Set AN/VRC-2; Utility Electronics part/dwg #PB-1226.	Transmitter control cable.
M-11	MICROPHONE, carbon: Sig C type T-17-B; complete with cable and mic plug; Amphenol part #91-MC4MT; Utility Electronics part/dwg #PB-1094.	Converts sound energy into electrical energy.
LS-2	SPEAKER: u/w Radio Set AN/VRC-2; consists of speaker in round inclosed metal cabinet 5½" diam x 3" h and attached speaker cable assembly; Utility Electronics part/dwg #PC-1159.	Converts electrical energy into sound energy.

2. Radio Receiver R-237B/VR

Ref symbol	Name of part and description	Function of part
	RECEIVING SET, radio: Sig C Radio Receiver R-237B/VR; FM; for communication; 30 to 40 mc; 6.3 v DC at 14.5 amp; with metal cover; 14¾" lg x 9¼" wd x 10¾" h overall; includes vibrator power supply; 15 tube (including rectifier) double conversion superhetrodyne circuit; crystal controlled; part of Sig C Radio Set AN/VRC-2; Utility Electronics dwg #PD1401.	
C-45, C-53, C-59, C-60	CAPACITOR, fixed: paper dielectric; 0.05 up ±20%; 600 vdcw; 1½" lg x ⅝" diam; hermetically sealed case and bracket of nonmagnetic material; two tinned solid wire leads 0.032" diam (#20 AWG) 1½" lg; JAN type CP29A2EF503M; spec JAN-C-25.	C-45: V-8 screen bypass. C-53: V-10 cathode bypass. C-59: V-12 input filter. C-60: V-12 plate filter.
C-74	CAPACITOR, fixed: paper dielectric; 0.25 uf ±20%; 200 vdcw; 2⅜" lg x ¾" diam; hermetically sealed case and bracket of nonmagnetic material; two tinned solid wire leads 0.040" diam (#18 AWG) 1½" lg; JAN type CP29AIEC254M; spec JAN-C-25.	C-74: 600-ohm line bypass.
C-56, C-61, C-65	CAPACITOR, fixed: electrolytic; polarized; 3 sect 20-20-20 uf; 450 vdcw; metallic case 3¾" lg x 1⅜" diam; four ⅝" lg term lugs; JAN type CE33F200R; spec JAN-C-62.	C-56: V-10 plate return and screen bypass. C-61: V-12 cathode bypass. C-65: V-13 cathode bypass.
C-64	CAPACITOR, fixed: mica dielectric; 100 uuf —10%; 500 vdcw; 51/64" lg x 15/32" wd x 7/32" h; two tinned solid wire leads 0.032" diam (#20 AWG) 1⅛" lg; JAN type CM20B101K; spec JAN-C-5.	C-64: V-12 input filter.
C-5	CAPACITOR, fixed: ceramic-dielectric (temperature-compensating) 2 uuf ±0.25 uuf; 500 vdcw; 0.46" lg x 0.24" diam; JAN type CC30CK020C; spec JAN-C-20A.	C-5: V-2 to V-3 coupling capacitor.
C-1	CAPACITOR, variable: air dielectric; plate meshing type; single sect 6 to 50 uuf ±10%; 500 RMS; 1¼" lg x ⅞" wd x 1⅛" d excluding shaft; screw driver adj; 14 plates; 180° clockwise rotation; with shaft lock; two #4-40 studs on 11/16" mtg/c; Sickles FW part #SD-3425.	C-1: V-1 grid coil tuning.
C-3, C-4, C-6, C-17, C-18, C-24, C-55, C-57, C-58, C-62, C-63, C-72	CAPACITOR, fixed: mica dielectric; 5600 uuf ±10%; 500 vdcw; 53/64" lg x 53/64" wd x 11/32" h; (#18 AWG) 1⅛" lg; JAN type CM35B562K; spec JAN-C-5.	C-3: V-1 cathode bypass. C-4: V-1 screen bypass. C-6: V-2 screen bypass. C-17: V-3 screen bypass. C-18: V-4 cathode bypass. C-24: V-4 screen bypass. C-55: V-10 to V-11 coupling. C-57: V-11 output load. C-58: V-11 output load. C-62: V-12 output coupling. C-63: V-12 input coupling. C-72: V-13 screen bypass.
C-52, C-54,	CAPACITOR, fixed: mica dielectric; 2200 uuf ±10%; 500 vdcw; 53/64" lg x 53/64" wd x 11/32" h; two tinned solid wire leads 0.040" diam (#18 AWG) 1⅛" lg; JAN type CM30B222K; spec JAN-C-5.	C-52: V-10 input coupling. C-54: V-10 plate load tuning.

2. Radio Receiver R-237B/VR (contd).

Ref symbol	Name of part and description	Function of part
C-25, C-30, C-31, C-32, C-38, C-39	CAPACITOR, fixed: paper dielectric; two sect of 0.05 uf ±20%, —10%; 600 vdcw; 1-13/16" wd x 1" d x ¾" h; hermetically sealed case of nonmagnetic material; JAN type CP53B63F503V; spec JAN-C-25.	C-25: V-5 cathode bypass. C-30: V-5 screen bypass. C-31: V-6 cathode bypass. C-32: V-6 screen bypass. C-38: V-11 squelch time constant. C-39: V-7 screen bypass.
	CLIP: crystal holder; spring temper phosphor bronze; ½" wd x 9/16" h x 1¼" lg overall; Utility Electronics part #PA-1148.	Crystal holder.
L-1	COIL, RF: antenna pri; 2½ turns of #14 bare copper tinned wire; unshielded; ¾" diam x 9/16" lg; Utility Electronics part #PA-1069.	L-1: Antenna primary coil.
L-2	COIL, RF: antenna secd; 9 turns of #21 bare copper tinned wire; unshielded; wound on polystyrene form; 9/16" diam x 1½" lg; mounts on one #6-32 screw; Utility Electronics part #PA-1070.	L-2: Antenna secondary coil.
J-6	CONNECTOR, female contact: 1 round contact; straight; LV; IPC part #5575.	J-6: Antenna receptacle.
J-7	CONNECTOR, female contact: 1 round contact; ½" lg x ½" diam. shoulder; cylindrical red bakelite shell; Amphenol part #78-II.	J-7: H-v receptacle.
J-2	CONNECTOR, female contact: 1 round contact; ½" lg x ½" diam shoulder; cylindrical yellow bakelite shell; Amphenol part #78-1LT.	J-2: Filament voltage receptacle.
J-5	CONNECTOR, female contact: 8 round radial contact; 1" lg x 1⅜" diam body; mica-filled; chrome pl brass shell; Amphenol part #79-P08FT.	J-5: Control receptacle.
J-1	JACK, telephone: for 2 contact 0.25" diam plug; 1¼" lg x ¾" diam; contact arrangement J-1; Sig C type JK-34A.	J-1: Meter receptacle.
	KNOB: bar; black bakelite; for ¼" diam shaft; single #8-32 setscrew; no marking; 11/16" diam x 13/32" h; Harry Davis Mold #1400.	
L-3	REACTOR: audio; 50 mh ±5%; at 1000 cyc; Q at 60 kc equals 9; 500 v RMS test; uncased; 1-9/32" lg x 2-9/32" wd x 1-5/32" h; mounts on right-angled bracket with one #4-40 screw; Utility Electronics part #PA-1072.	L-3: V-10 plate load.
R-6, R-19, R-38, R-41, R-42, R-43	RESISTOR, fixed: composition; JAN type RC20BF105K; 1 meg ±10% ½ w; spec JAN-R-11.	R-6: V-2 grid resistor. R-19: V-7 to V-11 coupling. R-38: V-10 grid resistor. R-41: V-11 output load. R-42: V-12 input coupling. R-43: V-12 squelch voltage coupling.
R-50	RESISTOR, fixed: composition; JAN type RC20BF224K; 220,000 ohms ±10%; ½ w; spec JAN-R-11.	R-50: V-12 audio input coupling.
R-39	RESISTOR, fixed: composition; JAN type RC20BF474K; 470,000 ohms ±10%; ½ w; spec JAN-R-11.	R-39: V-10 Input coupling.
R-2	RESISTOR, fixed: composition; JAN type RC20BF271K; 270 ohms ±10%; ½w; spec JAN-R-11.	R-2: V-1 cathode resistor.

2. Radio Receiver R-237B/VR (contd).

Ref symbol	Name of part and description	Function of part
R-51	RESISTOR, fixed: composition; JAN type RC20BF225K; 2.2 meg ±10%; ½ w; spec JAN-R-11.	R-51: V-13 grid resistor.
R-11, R-15	RESISTOR, fixed: composition; JAN type RC20BF331K; 330 ohms ±10%; ½ w; spec JAN-R-11.	R-11: V-4 cathode resistor. R-15: V-5 cathode resistor.
R-23	RESISTOR, fixed: composition; JAN type RC20BF561K; 560 ohms ±10%; ½ w; spec JAN-R-11.	R-23: V-6 cathode resistor.
R-8 R-18, R-24, R-30, R-33,	RESISTOR, fixed: composition; JAN type RC30BF273K; 27,000 ohms ±10%; 1 w; spec JAN R-11.	R-8: V-3 screen dropping. R-18: V-5 screen dropping. R-24: V-6 screen dropping. R-30: V-7 screen dropping. R-33: V-8 screen dropping and plate decoupling
R-16, R-7	RESISTOR, fixed: composition; JAN type RC20BF473K; 47,000 ohms ±10%; ½ w; spec JAN-R-11.	R-16: V-5 oscillator grid bias. R-7: V-2 screen dropping resistors.
R-44, R-48	RESISTOR, fixed: composition; JAN type RC20BF274K; 270,000 ohms ±10%; ½ w; spec JAN-R-11.	R-44: V-12 squelch plate resistor. R-48: V-12 plate load.
R-47	RESISTOR, fixed: composition; JAN type RC30BF473K; 47,000 ohms ±10%; 1 w; spec JAN-R-11.	R-47: V-12 bleeder.
R-45	RESISTOR, fixed: composition; JAN type RC20BF682K; 6800 ohms ±10%; ½ w; spec JAN-R-11.	R-45: V-12 bleeder and cathode resistor.
R-4, R-46, R-53	RESISTOR, fixed: composition; JAN type RC20BF472K; 4700 ohms ±10%; ½ w; spec JAN-R-11.	R-4: V-1 plate decoupling. R-46: V-12 cathode resistor. R-53: V-2 plate decoupling.
R-49	RESISTOR, fixed: composition; JAN type RC20BF824K; 820,000 ohms ±10%; ½ w; spec JAN-R-11.	R-49: V-12 audio input coupling.
R-52	RESISTOR, fixed: composition; JAN type RC30BF102K; 1000 ohms ±10%; 1 w; spec JAN-R-11.	R-52: V-13 cathode resistor.
R17	RESISTOR, fixed: composition; JAN type RC20BF154K; 150,000 ohms ±10%; ½ w; spec JAN-R-11.	R-17: V-5 oscillator plate decoupling.
R-12, R-40	RESISTOR, fixed: composition; JAN type RC30BF153K; 150,000 ohms ±10%; 1 w; spec JAN-R-11.	R-12: V-4 screen dropping and decoupling. R-40: V-10 plate decoupling.
R-3	RESISTOR, fixed: composition; JAN type RC20BF683K; 68,000 ohms ±10%; ½ w; spec JAN-R-11.	R-3: V-1 screen dropping and decoupling.
X-9, X-10, X-11, X-12, X-13, X-14, X-15	SOCKET, tube: octal; one piece saddle below chassis mtg; two ⅛" diam mtg holes on 1-5/16" mtg/c; 1-1/16" diam chassis cut-out required; round molded mica-filled phenolic body 1-1/16" diam x ½" thk; phosphor bronze cad pl contacts; Cinch part #51A-13696.	Tube sockets.
X-3, X-4, X-5, X-6, X-7, X-8	SOCKET, tube: octal; with shield; one piece saddle below chassis mtg; two ⅛" diam mtg holes on 1-5/16" mtg/c; 1-1/16" diam chassis cut-out required; round molded mica-filled phenolic body 1-1/16" diam x ½" thk; phosphor bronze cad pl contacts; Cinch part #51A-13696 with shield.	Tube sockets.

2. Radio Receiver R-237B/VR (contd).

Ref symbol	Name of part and description	Function of part
X-1, X-2	SOCKET, crystal: two contacts ¾" on centers set in a low loss phenolic base with two solid silver pl beryllium copper term; overall dimensions: 1-13/64" lg x 1-3/16" h x 41/64" w; Sig C type SO-200.	Crystal sockets.
T-1R	TUNER, RF: coil; 25.7 to 35.7 mc; consists of HF osc coils; 2 capacitors (6 to 45 uuf); one capacitor (5600 uuf); rectangular metal can 4¾" lg x 1⅞" wd x 1⅜" d; Utility Electronics part #SA-1073.	T-1R: H-f oscillator tuning and V-2 to V-3 coupling.
T-2R	TUNER, RF: coil; 30 to 40 mc; consists of mixer grid coil; first RF plate coil; two capacitors (6 to 45 uuf); one capacitor (270 uuf); one capacitor (100 uuf); one capacitor (5600 uuf); one resistor (4.7 meg); rectangular metal can 4-1/16" lg x 1⅞" wd x 1⅜" d; Utility Electronics part #SA-1074.	T-2R: V-1 plate tuning and V-1 to V-3 coupling.
T-3R	TUNER, RF: transformer; IF (high); 4.3 mc; consists of pri and secd on ceramic core; two variable capacitors (6 to 45 uuf); one capacitor (510 uuf); one resistor (100,000 ohms); one resistor (470,000 ohms); two capacitors (10 uuf); rectangular metal box 4-1/16" lg x 1⅞" wd x 1⅜" d; Utility Electronics part #SA-1076.	T-3R: 4.3 mc i-f coupling V-3 to V-4.
T-4R	TUNER, RF: transformer; IF (high); 4.3 mc; consists of pri and secd on ceramic core; two variable capacitors (6 to 45 uuf); two capacitors (10 uuf); one capacitor (510 uuf); one resistor (6800 ohms); one resistor (470,000 ohms); rectangular metal box 4-1/16" lg x 1⅞" wd x 1⅜" d; Utility Electronics part #SA-1078.	T-4R: 4.3 mc i-f coupling V-4 to V-5.
T-5R	TUNER, IF: transformer; IF (low); 455 kc; consists of single coil on ceramic core, variable capacitor (6 to 45 uuf); two capacitors (51 uuf); one capacitor (510 uuf); two resistors (1 meg); one resistor (0.18 meg); rectangular metal box 4-1/16" lg x 1⅞" wd x 1⅜"d; Utility Electronics part #SA-1080.	T-5R: V-5 plate tuning and coupling to V-6.
T-6R	TUNER, IF: transformer; IF (low); 455 kc; consists of 2 coils on ceramic core, two variable capacitors (6 to 45 uuf); two capacitors (51 uuf); one capacitor (100 uuf); two resistors (100,000 ohms); one resistor (47,000 ohms); one resistor (1.5 meg); one resistor (1 meg); rectangular metal box 4-1/16" lg x 1⅞" wd x 1⅜" d; Utility Electronics parts #SA-1082.	T-6R: 455 kc i-f coupling V-6 to V-7.
T-7R	TUNER, IF: transformer; IF (low); 455 kc; consists of 2 coils on ceramic core; two variable capacitors (6 to 45 uuf); two capacitors (51 uuf); one capacitor (100 uuf); one resistor (1.5 meg); one resistor (100,000 ohms); rectangular metal box 4-1/16" lg x 1⅞" wd x 1⅜" d; Utility Electronics part #SA-1084.	T-7R: 455 kc i-f coupling V-7 to V-8.
T-8R	TUNER, IF: transformer; IF (low); 455 kc; consists of pri and secd windings on ceramic form; dual variable capacitor (6 to 45 uuf each sect); two capacitors (39 uuf); two capacitors (510 uuf); one resistor (470,000 ohms); two resistors (100,000 ohms); one resistor (1 meg); rectangular metal box 4-1/16" lg x 1⅞" wd x 1⅜" d; Utility Electronics part #SA-1086.	T-8R: 455 kc i-f coupling V-8 to V-9.

2. Radio Receiver R-237B/VR (contd).

Ref symbol	Name of part and description	Function of part
T-3	TRANSFORMER, AF: plate coupling type; pri 10,000 ohms impedance; secd #1 600 ohms; secd #2 3 ohms; steel case; 2½" lg x 1¾" diam; six solder lugs on bottom; four 3/16" diam mtg holes on 1½" x 1½" ctr; per JAN-T-27, grade 1, class A; UTC part #E-4673; Utility Electronics part #PA-1021.	T-3: V-13 audio output.
SW-1	SWITCH, rotary: single pole 5 position; single sect; phosphor bronze silver pl contacts; steel body 1¼" diam x 7/16" thk; ¼" shaft x 5/16" lg; solder lug term; mounts in single 7/16" diam hole; Mallory part #3215J.	SW-1: Meter switch.
V-1, V-2 V-3, V-4, V-6, V-7, V-8, V-10	TUBE, electron: JAN-6SG7GT; pentode.	V-1: R-f amplifier. V-2: H-f oscillator. V-3: Mixer. V-4: 4.3 mc i-f amplifier. V-6: 455 kc i-f amplifier. V-7: First limiter. V-8: Second limiter. V-10: Noise amplifier.
V-5	TUBE, electron: JAN-6K8GY; converter.	V-5: Converter.
V-13	TUBE, electron: JAN-6K6GT; pentode.	V-13: Second a-f amplifier.
V-9, V-11	TUBE, electron: JAN-6H6GT; dual diode.	V-9: Discriminator. V-11: Noise rectifier.
V-12	TUBE, electron: JAN-6C8G; dual triode.	V-12: First a-f amplifier and squelch.

3. Radio Receiver R-237B/VR Power Supply

Ref symbol	Name of part and description	Function of part
	POWER SUPPLY: vibrator type; output 280 v 60 ma DC and 6 v DC; input 6 v DC, 11.5 amp; 3¾" wd x 8¾" lg x 4" h overall; (mounts on one #8-32 anchor nut in horizontal plane and two ⅛" mtg holes in vertical plane); p/o Radio Receiver R-237B/VR; Utility Electronics part/dwg #PC-1164.	
C-1, C-2	CAPACITOR, fixed: paper dielectric; 0.5 uf ±20%; 200 vdcw; 2⅛" lg x 1" diam hermetically sealed case of nonmagnetic material; JAN type CP29AIEC504M; spec JAN-C-25.	C-1: Input filter. C-2: Input filter.
C-4	CAPACITOR, fixed: electrolytic, polarized; 2 sect 20 uf per sect; 450 vdcw; metallic case 2¾" lg x 1⅜" diam; three 7/16" lg lugs; JAN type CE42F200R; spec JAN-C-62.	C-4: Output filter.
C-5	CAPACITOR, fixed: mica dielectric; 100 uuf ±10%; 500 vdcw; 51/64" lg x 15/32" wd x 7/32" h; two tinned solid wire leads 0.032" diam (#20 AWG) 1⅛" lg; JAN type CM20B101K; spec JAN-C-5.	R-f bypass.
C-3	CAPACITOR, fixed: paper dielectric; 8000 uuf ±20%; 1500 vdcw; 1¼" lg x 1" diam; hermetically sealed case of nonmagnetic material; JAN type CP28AIEH602M; spec JAN-C-25.	Buffer.

3. Radio Receiver R-237B/VR Power Supply (contd).

Ref symbol	Name of part and description	Function of part
L-1	COIL, RF: choke, single pie universal winding; unshielded; 14.7 uh at 2.07 mc, 5/8" lg x 1½" diam; Utility Electronics part/dwg #PA-1071.	Input filter.
L-2	COIL, RF: choke, single pie universal winding; unshielded; 1.87 uh at 5.8 mc, 1" lg x 1½" diam; Utility Electronics part/dwg #PA-1068.	Filament choke.
P-2	CONNECTOR, male contact: 1 straight round contact; 3/8" lg less contact x ½" diam; cylindrical red bakelite body; cable opening ⅛" diam; Amphenol part #71-1L.	B+ output.
P-3	CONNECTOR, male contact: 1 straight round contact; 3/8" lg less contact x ½" diam; cylindrical yellow bakelite body; cable opening ⅛" diam; Amphenol part #71-1L.	Filament output.
P-1	CONNECTOR, male contact: 6 straight round radial contacts; 1⅛" diam x 1⅛" lg; mica-filled insert; chrome pl brass shell; Amphenol part #79-PO6MT.	Power connector.
F-1	FUSE, cartridge: 20 amp; 32 v; one time; glass body; 9/32" x 1½" lg; Buss type #ACU.	Overload protection.
E-1	HOLDER, fuse: extractor post type; for single 3AG cartridge fuse; bakelite base with copper lugs; 18 amp; 5/8" diam mtg hole; bayonet type knob; 2 solder lug term; Buss type #HPC.	Holder for fuse F-1.
L-3	REACTOR: filter choke; 2.25 hy, 80 ma, DC; 600 ohms DC; 500 v RMS test; enclosed metal case; 2⅞" lg x 2⅜" diam; 2⅜" square face plate; two solder lug term on bottom; four 3/16" diam holes on 1-13/16" square mtg/c; UTC part #E4680; Utility Electronics part/dwg #PA-1018; per JAN-T-27, grade 1, class A.	Smoothing choke.
R-1, R-2	RESISTOR, fixed: composition; JAN type RC20BF470K; 47 ohms ±10%; ½w; spec JAN-R-11.	R-1: Suppressor. R-2: Suppressor.
R-3	RESISTOR, fixed: composition; JAN type RC40BF104K; 100,000 ohms ±10%; 2 w; spec JAN-R-11.	Bleeder resistor.
X-2, X-3	SOCKET, tube: octal; one piece saddle below chassis mtg; two ⅛" diam mtg holes on 1-5/16" mtg/c; 1-1/16" diam chassis cut-out required; round molded phenolic body 1-1/16" diam x 5/16" thk; phosphor bronze cad pl contacts; Cinch part #51A-13696.	X-2: Tube socket. X-3: Tube socket.
X-1	SOCKET, vibrator: 4 contact; one piece saddle below chassis mtg; two ⅛" diam mtg holes on 1¼" mtg/c; 1-5/32" diam chassis cut-out required; round molded phenolic body 1⅛" diam x 5/16" thk phosphor bronze cad pl contacts; Amphenol part #77-MIP4T.	Vibrator socket.
T-1	TRANSFORMER, power: vibrator; input 6 v DC CT, output 560 v at 80 ma; nonsynchronous; 100 cyc; enclosed metal case; case including term 3⅝" diam x 4⅛" lg with 3⅝" square face plate; six soldering lug term on bottom; four 3/16" holes on 2¾" square mtg/c; Electransf part #2102-1; Utility Electronics part/dwg #PA-1020; per JAN-T-27, grade 1, class A.	Power transformer.

3. Radio Receiver R-237B/VR Power Supply (contd).

Ref symbol	Name of part and description	Function of part
V-1, V-2	TUBE, electron: JAN 6X5GT; full wave rectifier.	V-1: H-v rectifiers. V-2: H-v rectifiers.
E-1	VIBRATOR, nonsynchronous; input 6 v DC, single reed; tubular shape; 1½" diam x 2⅞" h excluding prongs; ATR part #141.	Convert 6 volts dc to h-v ac.

4. Control Unit C-493B/VRC-2

Ref symbol	Name of part and description	Function of part
	CONTROL UNIT, radio set: part C-493B/VRC-2, part of Sig C Radio Set AN/VRC-2; metal chassis 3¼" wd x 2¼" d x 7⅜" lg; contains two controls, two indicating lights, mic receptacle, and term board; Utility Electronics part/dwg #PC-1403.	
	BOARD, terminal: general purpose binding post; 18 brass cad pl receptacle type solder term; term ½" between centers in two rows ½" apart; brown phenolic board; ⅛" thk x 1½" wd x 5½" lg; four 0.175" diam mtg holes on 1⅛" x 5⅛" mtg/c; Jones part #110-J-5718.	
	CONNECTOR, female contact: 4 round polarized radial contacts; straight; mic type; mica-filled molded bakelite insert; nickel pl brass shell; Amphenol part #91-PC4FT.	
	CONNECTOR, male contact: 1 straight round contact; ⅜" lg less contact x ½" diam; cylindrical yellow bakelite body; cable opening 5/32" diam; Amphenol part #71-IL.	
	FUSE, cartridge: 15 amp; opens at 135% in 1 hour; rated continuous at 110% load; 250 v; one time; 9/32" diam x 1½" lg; Buss type AGU.	
	KNOB, pointer: black phenolic; for ¼" diam shaft; one #8-32 setscrew; 1¼" lg x ⅝" h x ¾" thk overall; Harry Davies Mold #2300.	
M-2, M-3	LAMP, incandescent: 6 to 8 v, 0.15 amp; bulb T-3¼ clear; 1-3/16" lg overall; bayonet base; C-2R filament; Mazda part #47.	Pilot lights.
I-1	LIGHT, indicator: with lens; ½" diam green faceted lens; for miniature bayonet base, T-3¼ bulb; open metal frame; 1" diam x 1¾" lg overall; 11/16" mtg hole; horizontally mtd lamp, replaceable from front of panel; two solder lugs located on opposite sides of base socket; Dialco part #810 B-432.	For pilot light.
I-2	LIGHT, indicator: with lens; ½" diam red faceted lens; for miniature bayonet base, T-3¼ bulb; open metal frame; 1" diam x 1¾" lg overall; 11/16" mtg hole; horizontally mtd lamp, replaceable from front of panel; two solder lugs located on opposite sides of base of socket; Dialco part #810 B-431.	For pilot light.
R-1	RESISTOR, fixed: composition; JAN type RC20BF220K; 220 ohms ±10%; ½ w; spec JAN-R-11.	Voltage dropping.

4. Control Unit C-493B/VRC-2 (contd).

Ref symbol	Name of part and description	Function of part
R-5	RESISTOR, fixed: composition; JAN type RC20BF221K; 220 ohms ±10%; ½ w; spec JAN-R-11.	V-10 cathode resistor.
R-2	RESISTOR, fixed: composition; JAN type RC20BF271K; 270 ohms ±10%; ½ w; spec JAN-R-11.	Speaker shunt.
R-4	RESISTOR, variable: composition; 500,000 ohms ±20%; ½ w; 3 solder lug term; metal case 1⅛" diam x 11/16" d; enclosed; flatted metal shaft 0.250" diam x ⅞" lg; std A taper; contact arm insulated; normal torque; bushing ⅜"-32 x ⅜" lg; nonturn device located on 7/16" radius at 9 o'clock; SPST switch 3 amp 125 v, normally open operates at start of rotation; 2 solder lug term; CTS type GC-35.	Volume control.
R-3	RESISTOR, variable: composition; 75,000 ohms ±20%; ½ w; 3 solder lug term; metal case 1⅛" diam x ⅜" d; inclosed; flatted metal shaft 0.250" diam x ⅞" lg; std D taper; contact arm insulated; normal torque; bushing ⅜"-32 x ⅜" lg; nonturn device located on 7/16" radius at 9 o'clock; 2 solder lug term; CTS type 35.	Squelch control.

5. Radio Transmitter T-193B/VRC-2

Ref symbol	Name of part and description	Function of part
	TRANSMITTER, radio: Sig C Radio Transmitter T-193B/VRC-2; FM; 30 to 40 mc; output 30 w; input 6.3 v DC at 25 amp; with metal cover; 14½" lg x 9" wd x 8½" h overall; includes dynamotor power supply; crystal controlled; part of Sig C Radio Set AN/VRC-2.	
	CAP: connector cover; chrome pl brass; ⅞" diam x ½" h; Amphenol part #91-CCC-3.	
C-31, C-32	CAPACITOR, fixed: mica; 2000 uuf ±5%; 500 v; 53/64" lg x 53/64" wd x 9/32" thk; molded case; JAN type CM30B202J, spec. JAN-C-5.	C-31: V-3 modulation filter. C-32: V-2 modulation filter.
C-14, C-18, C-34	CAPACITOR, fixed: mica; 2200 uuf ±10%; 500 v; 53/64" lg x 53/64" wd x 9/32" thk; molded case; JAN type CM30B222K, spec JAN-C-5.	C-14: V-4 screen bypass. C-18: V-5 screen bypass. C-34: V-7 grid metering bypass.
C-1, C-22, C-26, C-27	CAPACITOR, fixed: mica; 5600 uuf ±10%; 500 v; 53/64" lg x 53/64" wd x 9/32" thk; molded case; JAN type CM35B562K, spec JAN-C-5.	C-1: V-1 grid metering bypass. C-22: V-6 screen bypass. C-26: V7 cathode metering bypass.
C-9, C-10, C-25	CAPACITOR, fixed; paper dielectric; 50,000 uuf ±20%; 600 v; ⅝" diam x 1½" lg; hermetically sealed case of nonmagnetic material and uninsulated; JAN type CP29A1EF503M, spec JAN-C-25.	C-9: V-2 and V-3 grid 2 bypass. C-10: V-2 and V-3 grids 3 and 5 bypass. C-25: B+ bypass.
C-2	CAPACITOR, fixed: mica; 24 uuf ±5%; 500 v; 51/64" lg x 15/32" wd x 7/32" thk; molded case; JAN type CM20B240J, spec JAN-C-6.	C-2: V-1 plate coil tuning.
C-8, C-33	CAPACITOR, fixed: dry-electrolytic; polarized; 2 sect. 45-45 uf; 150 vdcw; 2¼" lg x 1⅜" diam; metal can; JAN type CE42C450J, spec JAN-C-62.	C-8: V-2 and V-3 cathode bypass. C-33: Microphone circuit bypass.

5. Radio Transmitter T-193B/VRC-2 (contd).

Ref symbol	Name of part and description	Function of part
C-35, C-36	CAPACITOR, fixed: paper dielectric; 2 uf ±40%,—15%; 1000 v; 1½" diam x 5¼" lg; hermetically sealed case of nonmagnetic material and uninsulated; JAN type CP40B-2EG205X, spec JAN-C-25.	C-35: B+ filter. C-36: B+ filter.
C-30	CAPACITOR, fixed: mica dielectric; 0.01 uf ±10%; 2500 v; 1⅝" lg x 1⅛" wd x 29/64" d; molded case; JAN type CM45B103K, spec JAN-C-5.	C-30: Antenna coupling.
C-28	CAPACITOR, variable: air; single sect, plate meshing type; 5 to 35uuf; 0.060" air gap; 1-7/16" lg x 1-11/16" wd x 1⅝" h excluding shaft; screw driver adj; 11 cad pl plates; 360° rotation; ceramic insulation; solder lug term; Bud part #20003.	C-28: V-7 plate tuning.
C-29	CAPACITOR, variable: air; single sect, plate meshing type; 9.5 to 175 uuf; 0.030" air gap; 2⅛" lg 1-7/16" wd x 1⅝" h excluding shaft; screw driver adj; 23 cad pl plates; 360° rotation; ceramic insulation; solder lug term; Bud part #20032.	C-29: Antenna tuning.
	CLIP: crystal holder; spring temper phosphor bronze ½" wd x 9/16" h x 1¼" lg overall; Utility Electronics part #PA-1148.	
RFC-1, RFC-2	COIL, RF: 3 pie, universal wound; unshielded; 0.09 mh; 150 ma; 306 ohms resistance; 29/32" lg x ½" diam; Utility Electronics part #PA-1054.	R-f chokes. R-f chokes.
L-1	COIL, RF: antenna tank, 30 to 33 mc; single winding, single layer wound; unshielded; 8 turns of bare tinned copper wire B&S ga #10; 1⅞" lg x 1-3/16" OD; air core; Utility Electronics part #PA-1055-2.	Antenna tuning.
L-1	COIL, RF; antenna tank, 33 to 37 mc; single winding, single layer wound; unshielded; 7 turns of bare tinned copper wire B&S ga #10; 1-23/32" lg x 1-2/16" OD; air core; Utility Electronics part #PA-1055-6.	Antenna tuning.
L-1	COIL, RF: antenna tank, 37 to 40 mc; single winding, single layer wound; unshielded; 6 turns of bare tinned copper wire B&S ga #11; 15/16" lg x 1-3/16" OD; air core; Utility Electronics part #PA-1055-1.	
P-2	CONNECTOR, male contact: 4 flat polarized contacts; straight; 1⅜" lg x 1⅜" diam; 15 amp, 125 v; 10 amp, 250 v; cylindrical heavy brass shell; insert mica-filled bakelite; Amphenol part #92CIT.	Power connection.
J-4	CONNECTOR, female contact: 6 round radial contacts; straight; 1-1/32" lg x 1½" diam; Amphenol part #79-PO6FT.	For receiver connections.
P-1	CONNECTOR, male contact: 8 round radial contacts; straight; 29/32" lg x 1-7/64" diam; Amphenol part #79-PO8MT.	For control connections.
J-3, J-5	CONNECTOR, female contact: 1 round contact; straight; LV; IPC part #5575.	J-3: Antenna connector. J-5: Receiver connector.

5. Radio Transmitter T-193B/VRC-2 (contd).

Ref symbol	Name of part and description	Function of part
J-2	CONNECTOR, female contact: 4 round polarized radial contacts; straight; mic type; mica-filled molded bakelite insert; nickel pl brass shell; 1" diam x ¾ lg overall; Amphenol part #91-PC4FT.	Microphone connector.
F-1	FUSE, cartridge: 20 amp 125 v; one-time; glass body 9/32" diam x1½" lg; Buss type AGU.	Overload protector.
E-1	HOLDER, fuse: extractor post type; for single 4AG cartridge fuse; bakelite base with copper lugs; 18 amp normal; ⅝" diam mtg hole; bayonet type knob; 2 solder lug term; Buss type HPC.	Fuse holder.
	INSULATOR, standoff: round post shape; JAN-type NS5W0112; spec JAN-I-8.	
J-1	JACK, telephone: for 2 contact 0.25" diam plug; 1¼" lg x ¾" diam; contact arrangement J-1; Sig C type JK-34A.	Meter jack.
	KNOB: round; black bakelite; for ¼" diam shaft; single #8-32 setscrew; 11/16" diam x 13/32" d; Harry Davies Mold #1400.	
RY-1	RELAY, solenoid: SPST, normally open; contact rating 50 amp; ⅜" diam silver contacts; single wound coil 6 v DC; 6 ohms coil resistance, screw type term on coil and contacts; 2½" h x 2" wd x 2¼" lg; two ⅛" mtg holes 2⅜" apart; fast acting; C-H type 6041H83A or equivalent.	Power relay.
RY-2	RELAY, armature: SPST, normally open; contact rating 50 amp; ⅜" diam silver contacts; single wound coil, 1 w DC, 10.8 ohms, non-inductive; solder lug term on coil, screw type term on contacts; 2½" h x 2" wd x 2¼" lg; four #6-32 threaded elastic stop nuts on ¾" x 1⅝" mtg/c; fast acting; power type; Allied Cont type #CN-13D.	Power relay.
RY-3	RELAY, armature: 3PDT; contact rating 15 amp; ¼" diam silver contact; single wound coil, 1.5 w DC, 12 ohms, non-inductive; solder lug term on coil and contacts; 1½" h x 2-11/16" wd x 1⅝" lg; two ⅛" holes on 1" mtg/c; fast acting; antenna type; Allied Cont type #HRX.	Transmit-receive relay.
R-11, R-12	RESISTOR, fixed: composition; JAN type RC20BF333K; 33,000 ohms ±10%; ½ w; spec JAN-R-11.	V-2 and V-3 screen voltage dropping resistors.
R-19, R-23	RESISTOR, fixed: composition; JAN type RC20BF102K; 1000 ohms ±10%; ½ w; spec JAN-R-11.	R-19: V-4 plate dropping resistor. R-23: V-5 plate dropping resistor.
R-16, R-20	RESISTOR, fixed: composition; JAN type RC20BF154K; 150,000 ohms ±10%; ½ w; spec JAN-R-11.	R-16: V-4 screen dropping resistor. R-20: V-5 screen dropping resistor.
R-15	RESISTOR, fixed: composition; JAN type RC20BF102K; 1000 ohms ±10%; ½ w; spec JAN R-11.	R-15: V-2 and V-3 plate decoupling resistor.
R-7	RESISTOR, fixed: composition; JAN type RC20BF472K; 4700 ohms ±10%; ½ w; spec JAN-R-11.	R-7: V-1 plate decoupling resistor.
R-9 R-10	RESISTOR, fixed: composition; JAN type RC20BF104K; 100,000 ohms ±10%; ½ w; spec JAN-R-11.	V-2 and V-3 screen voltage dropping.
R-35	RESISTOR, fixed: composition; JAN type RC20BF273K; 27,000 ohms ±10%; ½ w; spec JAN-R-11.	Antenna bleeder.

5. Radio Transmitter T-193B/VRC-2 (contd).

Ref symbol	Name of part and description	Function of part
R-31	RESISTOR, fixed: composition; JAN type RC20BF471K; 470 ohms ±10%; ½ w; spec JAN-R-11.	Microphone current limiting.
R-8	RESISTOR, fixed: composition; JAN type RC20BF331K; 330 ohms ±10%; ½ w; spec JAN-R-11.	V-2 and V-3 cathode resistor.
R-39, R-38, R-26, R-37	RESISTOR, fixed: composition; JAN type RC40BF123K; 12,000 ohms ±10%; 2 w; spec JAN-R-11.	V-7 screen dropping.
R-34	RESISTOR, fixed: composition; JAN type RC30BF223K; 22,000 ohms ±10%; 1 w; spec JAN-R-11.	R-34: V-7 grid.
R-33	RESISTOR, fixed: composition; JAN type RC20BF180K; 18 ohms ±10%; ½ w; spec JAN-R-11.	R-33: Grid metering.
R-28, R-29	RESISTOR, fixed: composition; JAN type RC20BF224K; 220,000 ohms ±10%; ½ w; spec JAN-R-11.	R-28: V-3 modulation filter. R-29: V-2 modulation filter.
R-1	RESISTOR, fixed: composition; JAN type RC20BF474K; 470,000 ohms ±10%; ½ w; spec JAN-R-11.	R-1: V-1 grid.
R-27, R-30	RESISTOR, fixed: composition; JAN type RC21BF223K; 22,000 ohms ±10%; ½ w; spec JAN-R-11.	R-27: V-3 modulation filter. R-30: V-2 modulation filter.
R-25	RESISTOR, fixed: WW; JAN type RU3BR51J; 0.51 ohm ±5%; ½ w; spec JAN-R-184.	V-7 cathode metering.
R-32, R-36	RESISTOR, fixed: WW; JAN type RW32G252; 2500 ohms; 12 w; spec JAN-R-26A.	B+ voltage dropping.
X-2, X-3	SOCKET, tube: octal; one piece saddle below chassis mtg; two ⅛" diam mtg holes on 1-5/16" mtg/c; 1-1/16" diam chassis cut-out required; round molded mica-filled phenolic body 1-1/16" diam x ½" thk; phosphor bronze cad pl contacts; Cinch part #51A-13696.	Tube sockets.
X-4, X-5, X-6, X-7, X-8	SOCKET, tube: loctal; one piece saddle above chassis mtg; two ⅛" diam mtg holes on 1-5/16" mtg/c; 1-1/16" diam chassis cut-out required; round molded mica-filled phenolic body 1-1/16" diam x ½" thk; phosphor bronze cad pl contacts; Amphenol #88-BXTM.	Tube sockets.
	SOCKET, crystal: 2 contact molded-in-plate type; two 5/32" mtg holes on 1½" centers 1-5/32" diam chassis mtg hole; mica-filled bakelite body; Amphenol part #77-MIP-5T.	Crystal socket.
X-1	SOCKET, tube: 3 contact; two slotted holes for #6 screw to fit mtg/c from 1½" to 1⅞"; 1-9/32" diam chassis mtg hole; steatite body; Amphenol part #49-RSS5.	Tube socket.
T-1	TUNER, RF: coil; osc transformer; 937.5 to 1250 kc; consists of coil wound on ceramic form, one variable air capacitor (6 to 45 uuf), two capacitors (100 uuf), one capacitor (24 uuf), one capacitor (2200 uuf), one capacitor (5600 uuf), one resistor (10,000 ohms), two resistors (47,000 ohms), and one resistor (100 ohms); rectangular metal box 4½" lg x 2" wd x 1½" d; Utility Electronics part #SA-1057.	V-1 oscillator transformer.

5. Radio Transmitter T-193B/VRC-2 (contd).

Ref symbol	Name of part and description	Function of part
T-2	TUNER, RF: coil; modulator transformer; 937.5 to 1250 kc; consists of coil wound on ceramic form, one variable air capacitor (6 to 45 uuf), one capacitor (5600 uuf), one capacitor (100 uuf), one resistor (0.22 meg.), one capacitor (2200 uuf), one resistor (100 ohms); rectangular metal box 4½" lg x 2" wd x 1½" d; Utility Electronics part #SA-1059.	V-2 modulator transformer.
T-3	TUNER, RF: coil; first quadrupler; 3750 to 5000 kc, double tuned; consists of two coils wound on polystyrene form, one variable air capacitor (dual 6 to 45 uuf each sect) two capacitors (2200 uuf), one resistor (0.22 meg, one resistor (100 ohms); rectanglar metal box 4" lg x 2" wd x 1½" d; Utility Electronics part #SA-1066.	V-4 first quadrupler transformer.
T-4	TUNER, RF: coil; second quadrupler; 15 to 20 mc, double tuned; consists of two coils wound on polystyrene form, one variable air capacitor (dual 6 to 45 uuf each sect) two capacitors (2200 uuf), one resistor (0.22 meg), one resistor (100 ohms); rectangular metal box 4" lg x 2" wd x 1½" d; Utility Electronics part #SA-1063.	V-5 second quadrupler transformer.
T-5	TUNER, RF: coil; doubler; 30 to 40 mc; consists of coil on polystyrene form, one variable air capacitor (6 to 45 uuf), one capacitor (51 uuf), one capacitor (2200 uuf), one resistor (2200 ohms); rectangular metal box 4½ lg x 2" wd x 1½" d; Utility Electronics part #SA-1065.	V-6 doubler transformer.
S-1	SWITCH, rotary: single pole 7 position; single sect; phosphor bronze silver pl contacts; steel body; 1¼" diam x 7/16" thk, ¼" shaft x 5/16" lg; solder lug term; mounts in single 7/16" diam hole; Mallory part #3217J.	Meter switch.
T-6	TRANSFORMER, AF: mic type; pri 50 ohms at 0.015 amp DC, 7.8 ohms DC resistance; secd 50,000 ohms impedance CT, 4100 DC resistance; freq response flat from 150 cyc to 5000 cyc; inclosed metal case; 2⅞" lg x 2⅜" diam; five solder lugs on bottom; four 3/16" diam holes on 1⅞" square mtg/c; per JAN-T-27, grade 1, class A; UTC part #E4685; Utility Electronics part/dwg #PA-1014.	Microphone input.
V-1, V-4, V-5	TUBE, electron: JAN-7C7; pentode.	V-1 oscillator. V-4 first quadrupler. V-5 second quadrupler.
V-2, V-3	TUBE, electron: JAN-7A8; octode converter.	V-2 modulator. V-3 modulator.
V-6	TUBE, electron: JAN-6V6GT; beam power amplifier.	Doubler.
V-7	TUBE, electron: JAN-807; beam power amplifier.	Power amplifier.
D-1	DYNAMOTOR: plate supply; output 600 v DC, 0.175 amp; input 5.5 v DC, 31 amp; four ⅛" mtg holes on 2¾" x 4⅜" mtg/c; 3" diam x 8½" lg overall; Wemco style #LY-12561.	
	BRUSH SET: electrical contact; consists of 2 each HV commutator brushes and 2 each LV commutator brushes; carbon. Wemco grade NC-AY for HV; grade 20-+L for LV; Hv brushes ½" lg x ¼" wd x 3/32" thk; LV brushes 9/16" lg x ⅜" wd x ⅜" thk; 2 brushes marked "+"; 2 brushes marked "—".	

6. Fuse Box

Ref symbol	Name of part and description	Function of part
	FUSE BOX: for single 50 amp fuse block; metal gray crackle finish; with cover; 6⅜" lg x 2½" h x 2-3/16" wd; two 0.205 diam mtg holes on 5¼" mtg/c; 1 grommet on each end of box for cable entrance; Utility Electronics part/dwg #PB-1167.	Main fuse holder.
F-1	FUSE, cartridge: 50 amp; opens at 135% in one hour; rated continuous at 110% load; 250 v; one-time; ¾ diam x 3" lg; Buss part #REN 6.	
E-1	HOLDER, fuse: block type; for one ¾" diam x 3" lg cartridge fuse; glazed porcelain with copper clips; 60 amp; 4-11/16" lg x 2-1/16" h x 1-15/16" wd; two 0.205 mtg holes on 1-3/16" mtg/c; screw term; Chase-Shawmut part #2068S.	
H-1, H-2	SCREW, thumb. wing head; brass, cad pl; #8-32; 7/16" lg; flat point; captive type, shoulder 3/16" from end of thread 1/16" wd x ¼" diam; Utility Electronics part #PA-1125.	
	LINK: ⅜" wd x 3-13/32" lg; Bus type LKN; 250 v.	

Figure 62. Change caption to read:
Radio Receiver R-237/VR and Radio Receiver R-237A/VR, complete schematic diagram.

Figure 62. Add figure 62.1 after figure 62.

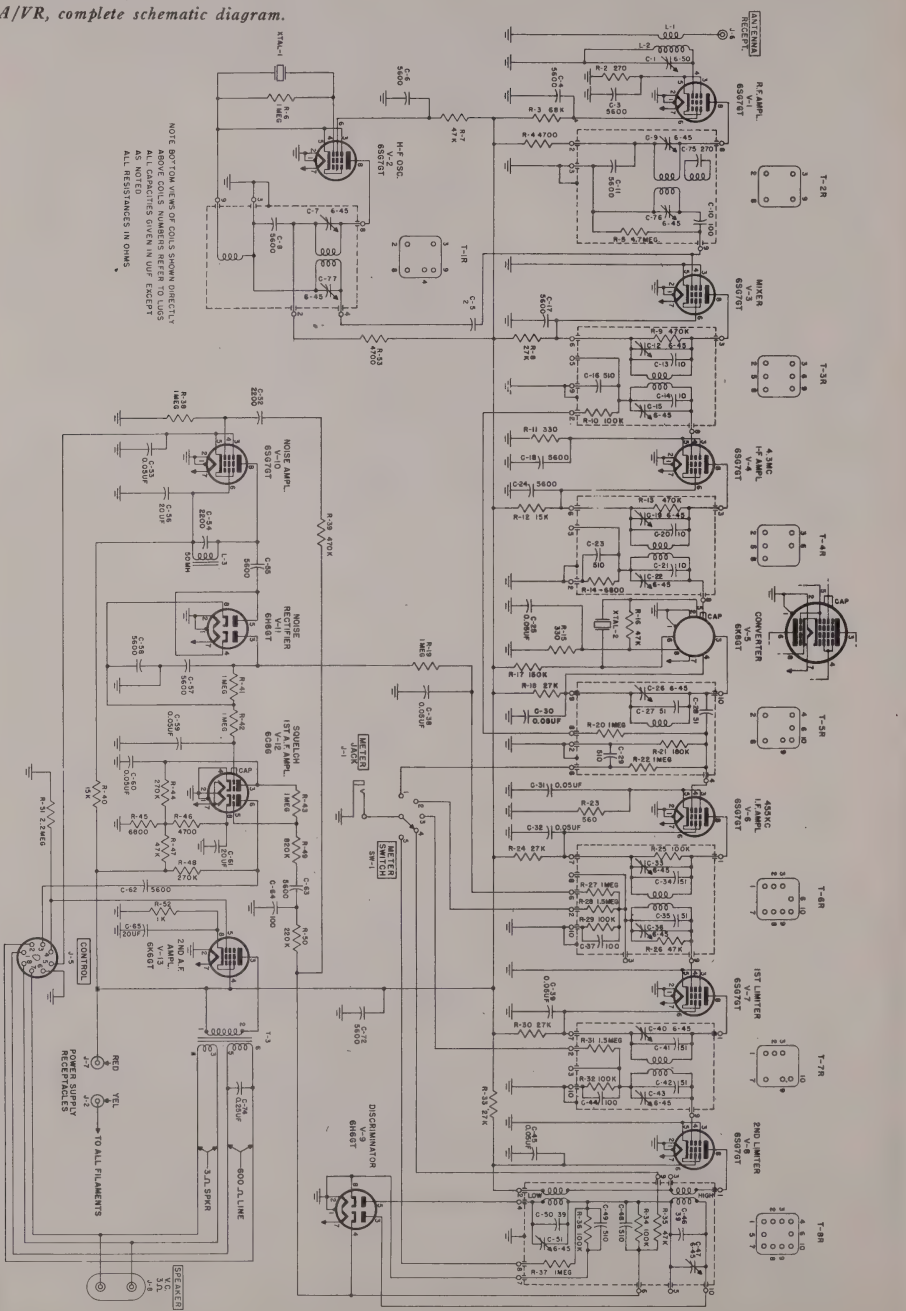


Figure 62.1. Radio Receiver R-237B/VR, complete schematic diagram.

TM 607-C2-52

Add figure 63 after figure 62.1.

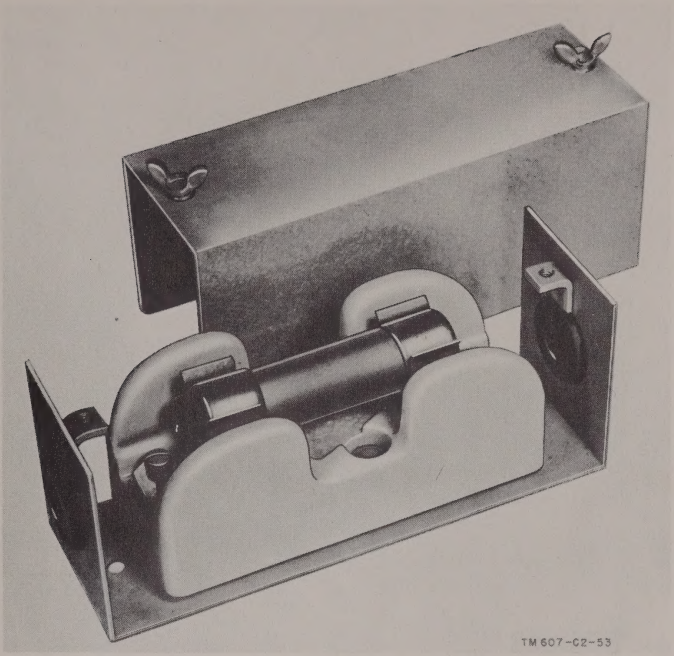


Figure 63. AN/VRC-2 (Sets bearing Order No. 20591-Ph-49), fuse guard.